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**Finding of No Significant Impact
and
Decision
for
Predator Damage Management
in Colorado**

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services (WS) program responds to a variety of requests for assistance from individuals, private and public organizations and agencies experiencing damage caused by wildlife in Colorado. WS activities are conducted in cooperation with other Federal, state, and local agencies, as well as private organizations and individuals.

APHIS-WS has the Federal statutory authority under the Act of March 2, 1931, as amended, and the Act of December 22, 1987, to cooperate with other Federal agencies and programs, States, local jurisdictions, individuals, public and private agencies, organizations, and institutions while conducting a program of wildlife services involving animal species that are injurious and/or a nuisance to, among other things, agriculture, horticulture, forestry, animal husbandry, wildlife, and human health and safety as well as while conducting a program of wildlife services involving mammal and bird species that are reservoirs for zoonotic diseases.

WS cooperates with the Colorado Department of Agriculture (CDA) and several Counties in Colorado, and works closely with the Colorado Division of Wildlife (CDOW) in providing assistance with requests for wildlife damage management service. Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management (WDM) actions are categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). However, with regard to WS's predator damage management (PDM) activities in Colorado, WS prepared an environmental assessment (EA) according to the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 *et seq.*), the regulations of the Council on Environmental Quality for implementing the procedural provisions of NEPA (40 CFR parts 1500-1508), the USDA regulations implementing NEPA (7 CFR part 1b), and APHIS' NEPA Implementing Procedures (7 CFR part 372).

The EA was prepared to facilitate planning, interagency coordination, streamline program management, and to involve the public and obtain their input through comments and feedback. Additionally, the EA analyzed and evaluated the applicable environmental information along with other associated documentation and/or reference materials cited in it, to assist the agency environmental decision maker in determining whether the proposed action (to continue with the specified PDM actions in Colorado) would have any significant impacts on the human environment that could be potentially caused by such PDM actions.

WS previously prepared two EAs covering PDM in Colorado: Environmental Assessment: Predator Damage Management In Western Colorado, with Decision and Finding of No Significant Impact (FONSI) issued October 30, 1997 and Environmental Assessment: Predator Damage Management In Eastern Colorado, with Decision and FONSI issued November 1, 1999. A subsequent Decision and FONSI on the Western Colorado EA was



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issued in March 2001. This Final EA for APHIS-WS PDM actions in Colorado supersedes those documents and incorporates relevant analysis from them by reference. The Final EA for APHIS-WS PDM actions in Colorado as well as this FONSI and its appendices will be placed on APHIS-WS' website with the following link: <http://www.aphis.usda.gov/ws/eafrontpage.html>.

The final EA that is the subject of this Decision includes within its scope the following predator species that cause or may cause damage resulting in requests for WS PDM assistance: coyotes (*Canis latrans*), black bears (*Ursus americanus*), mountain lions (*Felis concolor*), striped skunks (*Mephitis mephitis*), red fox (*Vulpes vulpes*), raccoons (*Procyon lotor*), feral/free roaming dogs (*Canis familiaris*), bobcats (*Lynx rufus*), feral/free roaming cats (*Felis domesticus*), badgers (*Taxidea taxus*), gray fox (*Urocyon cinereoargenteus*), opossums (*Didelphis virginianus*), western spotted skunks (*Spilogale gracilis*), long-tailed weasels (*Mustela frenata*), kit fox (*V. macrotis*), swift fox (*V. velox*), ringtails (*Bassariscus astutus*), marten (*Martes americana*), mink (*Mustela vison*), ermine (*M. erminea*), feral domestic ferrets (*M. putorius furo*), eastern spotted skunks (*Spilogale putorius*), and hog-nosed skunks (*Conepatus mesoleucus*).

A pre-decisional EA was released by WS in June 2005 and made available for a 39-day public comment period. As a result of comments on the June 2005 EA, a Final EA was released in October 2005 and made available for a 30-day public comment period. The EA documented the purpose and need for PDM in Colorado. PDM could be initiated to address damage caused by any of the above species, but the majority of PDM in Colorado is focused on the first 6 species shown above. WS has not been requested to provide PDM assistance for several of the species above, at least in recent years, but the potential need for assistance regarding those species could very well arise so that there is the potential for WS to be requested to conduct PDM actions to resolve damage caused by those species in the future. The EA assessed potential impacts of various alternatives in relation to issues analyzed for responding to predator damage problems.

WS's proposed action is to continue the current PDM program in Colorado which allows for the use of all legal PDM methods in reference to predators engaging in injurious and/or nuisance behavior affecting various interests that should or can be protected on all lands authorized in the State for the protection of agriculture, property, natural resources, and public safety. WS cooperates with CDA and several counties as authorized under State Law in conducting PDM. In Colorado, State laws permit landowners and resource managers to take predators that are causing damage under the restrictions established by State Constitutional Amendment 14 which prohibits the use of certain traps and chemical toxicants on both private and public lands in the State except as allowed under certain exemptions. CDOW documents the initiation of 30-day exemptions and may confirm that damage has occurred. CDOW also regulates trapping activities outside of the agricultural exemptions provided by Amendment 14. CDA regulates the use of the prohibited methods when used under the agricultural exemptions authorized by Amendment 14.

Amendment 14 authorizes the use of snares, leghold traps and body-gripping traps and certain types of chemical toxicants on private land to take predators for a 30 day time period only once during a calendar year. However, predator-exclusion methods, habitat modifications, shooting, frightening devices, cage traps, and other PDM methods can be used year-round.

A major overarching factor in determining how to analyze potential environmental impacts of WS's involvement in PDM in Colorado is that if, for whatever reason, whatever PDM conducted by WS is discontinued, similar types and levels of management will most likely be continued by State and/or local governments and/or private entities as allowed by State and Federal laws. Thus, these PDM activities could take place without Federal assistance, and, hence, would not trigger NEPA. From a practical perspective, this means that the Federal WS program has limited ability to affect the environmental outcome of PDM in Colorado, except that, based on WS

employees' years of professional expertise and experience in dealing with PDM actions, the WS program is likely to have lower risks to and effects on nontarget species and on the human environment in general, including people, than some other programs or alternatives available to State agencies and private landowners. Therefore, WS has a less likely chance of negatively affecting the human environment affected by PDM actions than would non-Federal or private entities. In other words, WS PDM activities most likely have less of an adverse effect on the human environment than would PDM programs that would be likely to occur in the absence of WS PDM assistance. Thus, WS has a limited ability to affect the environmental status quo in Colorado. Despite this limitation of Federal decision-making in this situation, this EA process is valuable for informing the public and decision-makers of relevant environmental issues and alternatives of PDM to address the various needs for action described in the EA.

Public Involvement

Drafts of the June 2005 pre-decisional EA were sent to six agencies with professional expertise or responsibility for management of wildlife, predator damage, or government-owned/managed land where PDM has been or may be needed, for their review and comments. The comments received from these agencies were considered and, where appropriate, used in preparing the EA.

Following interagency review of the draft, a pre-decisional EA was prepared and released to the public for a 39-day comment period. "Notices of Availability" (NOA) of the pre-decisional EA were published in 2 statewide and 3 local Colorado newspapers: The Denver Post and Rocky Mountain News for 3 consecutive days (May 21-23, 2005), and the Pueblo Chieftain, the Durango Herald, and the Grand Junction Daily Sentinel for 1 day (May 23, 2005). As a result of the newspaper notices, 7 EAs were sent to individuals who requested them. In addition, the EA was sent directly to 40 interested public and private organizations and individuals on June 7, 2005. The deadline for public comments was set at July 15, 2005, but all comments received, even those following the deadline (2), were reviewed and considered. A total of 6 comment letters was received in response to the EA: 2 from nonprofit environmental organizations, 2 from nonprofit agricultural organizations, and 2 from private individuals (one associated with a county program).

Following the receipt of these comment letters, WS revised the EA and addressed several new issues identified in the comment letters. The final EA was then completed and directly mailed to 9 agencies and 6 individuals or entities that provided comments on the pre-decisional EA. An NOA was published in the Denver Post and Rocky Mountain News October 22-24, 2005, and in the Durango Herald, Grand Junction Daily Sentinel, and Pueblo Chieftain on October 24, 2005. An NOA was also sent to 14 entities and individuals. As a result of the newspaper notices, a copy of the EA was mailed to each of four individuals or entities that requested it. The public was provided with a 30 day comment period on the final EA. The deadline for receiving comments on the final EA was set at November 23, 2005. Two public comments were received on the EA: one from an environmental group and the other from an agricultural association.

The issues described in the comment letters for the most part have been addressed in the final EA. However, some of the comments indicated topics that warranted additional clarification or discussion. These are further addressed immediately below as 9 identified issues. In addition, WS's consideration and responses to comments are attached to this Decision as Appendix A.

Issue 1: Site-specific Impacts have been thoroughly Analyzed and Discussed in the Final EA.

A comment was received stating that WS did not analyze site-specific impacts in the final Colorado PDM EA.

We disagree. The EA analyzed site-specific impacts associated with PDM in Colorado. First, we provided detailed information on the specific areas and the particular types of federal public lands where WS PDM occurs which addressed the commenter's expressed particular interest regarding potential effects resulting from our PDM actions in those particular areas. We identified in Section 2.3.2.4 the particular BLM Resource Areas (RAs) and USFS National Forests (NF) and Ranger Districts, as well as the individual grazing allotments in those areas where we have conducted aerial hunting activities in the past as a representative classification and example of the types of locations where we would expect to be requested to conduct such activities in the future. Of course, the particular wildlife species that are typically the target of our PDM actions are by no means static or stationary. We must reasonably expect that there will be future PDM requests in those or other similar areas. Section 4.1.1.1 and Tables 26 and 27 also identify each BLM RA and USFS NF worked by WS in Colorado, the size or amount of those particular land areas worked, and the species taken on those lands. The analysis of impacts on both target and nontarget species in Sections 4.1.1.1 and 4.1.2.1 discussed impacts to species impacted by PDM and site-specific impacts for coyotes. Section 4.1.4.1 included local-level analysis for WS PDM activities on federal public lands and showed those areas where it occurs at the greatest intensity.

We also considered the potential for our PDM activities to affect the unique characteristics of particular areas within which unique characteristics meriting special protections or considerations have been identified by land managers and found that WS's PDM activities have little or no potential at all to cause any effects on those unique characteristics (Section 2.3.3.). We have adequately analyzed and described site-specific impact issues in our descriptions of our PDM activities, and our analysis of impacts based on relevant issues is adequate and applicable to all of the identified site-specific locations where we have worked in Colorado and where we can reasonably expect to work in the future.

To further be as responsive as realistically possible, we have added even more detailed data than presented in the Final EA as an Appendix (Appendix B) to this Decision document showing all BLM and USFS grazing allotments where WS has conducted PDM from FY 2002 to FY 2004 and our "best-guess" at the allotments where WS PDM is likely to be conducted over the next several years (FY 2005 through FY 2012). We believe the analysis of relevant environmental issues in the two EAs and herein are reliable and adequate to reasonably conclude there is little risk of significant adverse effects at the site-specific level in any of the areas shown in Appendix B.

To require any more site-specificity overlooks the frequently urgent nature of PDM, and the fact that the exact timing or location of individual activities cannot usually be predicted well enough ahead of time to definitively predict the exact locations or times in an EA or EIS (as explained in section 1.6.5 of the Final EA). WS actions in dealing with somewhat unpredictable predators are, in many respects, analogous to those of other agencies or entities with damage management missions such as fire and police departments, emergency clean-up organizations, and insurance companies. Fire and police departments and other emergency response agencies cannot predict where the next fire will occur or where the next burglary or assault or other emergency will happen. Similarly, although WS can predict some of the possible locations or kinds of situations and sites where wildlife damage might occur, an accurate prediction cannot be made regarding

the specific locations or times where many predator damage situations will occur in any given year.

Obviously, it would be both unrealistic and impractical for a fire or police department (or likewise for many PDM situations, a federal response agency like WS) to have to write an environmental analysis document with a 30-day comment period each time an emergency or relatively urgent request for assistance is received and before action could be taken to address a site-specific problem. Exactly when or where wildlife will create the next conflict with humans and their important interests is obviously not very predictable. We can evaluate and scrutinize where we have typically done PDM and other wildlife services actions in the past and thereby expect that we will probably be requested to do such actions in the general types of locations where we have worked in the past, e.g. airports to control bird strikes on commercial or military aircraft, or the typical types of farms or ranches where coyote control has occurred. But we cannot definitively predict exactly which airports, farms, or ranches that have not before requested our services will do so in the future.

In order to minimize adverse impacts on the public or other aspects of the affected human environment when a response agency goes out to address the next reported incident, the agency establishes standard operating procedures (SOPs) that are designed to avoid or minimize the risk of adverse effects in the types of areas and situations in which they may find themselves responding to a need for their services. Section 3.4 of the final EA describes or references numerous SOPs that we have in place to minimize the risk of adverse environmental effects when we provide PDM assistance in any subsequent specific locale following a request. We believe that these SOPs are effective and sufficiently adequate to avoid significant adverse effects on the quality of the human environment that is affected by WS PDM action.

In light of our many years of experience and also in light of the nature of the species we deal with in PDM actions, we know that requests for our assistance and resulting needs for PDM action in any given year will occur on some but probably not all of the exact same areas we worked in the prior year, and that we will undoubtedly receive requests to conduct PDM in new locations next year where we did not conduct PDM this year. As evidence of this, data on the federal land grazing allotments on which WS PDM has been conducted over the past several years show that, typically, only about 50% of the allotments worked one year are also worked the following year. Thus, as grazing leases change and predator damage occurs in varied areas, needs for PDM change from area to area and from year to year.

As such, there is no way for us to be prospectively 100% sure of and/or to be able to definitively predict all of the exact site-specific locations for which we might receive PDM requests in the future, and thus there is no realistic way to thereby analyze the prospectively potential environmental effects of possible PDM actions on those unknown future site-specific locations. That is precisely the fundamental and true point of the analogy we present in Section 1.6.5 of the Final EA that, just like emergency response agencies like fire and police departments cannot predict where the next fire will occur or where the next burglary or assault will happen, we cannot predict when or where the next request for wildlife services will arise.

Additionally, we have what could be described as a monitoring and "adaptive management" process in place to maximize the probability that conflicts that might arise as a result of changing circumstances will be identified in the future so that we can take further action to avoid significant adverse effects. That process is the annual coordination and review of our PDM operations that occurs through "work planning" described in Section 1.4. This annual coordination and review process is performed with land management agencies and the involved

State agencies that are responsible for management of the resources that may be directly or indirectly affected by WS PDM activities. The work planning also provides, in the most practical way we know of, the best opportunity for new potential and substantive environmental concerns to be raised based on changing conditions.

For example, if a new "special management area" was to be established to protect a particular species that we impact with PDM, then, depending on all the respective facts, we might need to avoid or stop conducting PDM in that area, or switch to using other PDM methods in that area that have been analyzed and evaluated through environmental analysis for that area and would not have the potential to significantly adversely affect the particular species. By coordinating at least annually with Federal land and State wildlife managers, they are offered every reasonable opportunity to bring any such changes in circumstances to our attention. What this means to the issue of "site-specificity" is that our SOPs in combination with this annual work planning and review process are built-in means for avoiding significant environmental effects at the local site-specific level, and/or they allow for the identification of significant effects that would then require the preparation of an EIS if the actions causing such significant effects were proposed for continuation or implementation. The "unpredictable" factors and aspects of PDM are exactly why the agency has institutionalized a monitoring and "adaptive management" process and are a fundamental reason development and use of SOPs. Given the nature of WS's request-based service-oriented program for managing damage by wildlife and the often urgent need to quickly respond to requests for assistance, this is the most realistic and practical way for us to address site-specific issues and still be able to meet our Federal responsibilities and mission as authorized by Congress.

The inability to predict where PDM requests will arise is why we have described the typical areas of Federal public lands where WS conducts most of its PDM activity in Colorado as rural areas of rangeland and forest and pasture areas where livestock are grazed. These areas include BLM and USFS grazing allotments. Other typical locations where PDM actions may be needed include specific and uniquely identifiable locations such as airports (e.g., where coyotes have been traversing runways and pose collision risks to aircraft during take-offs and landings), and virtually anyplace in urban, suburban, and rural areas where nuisance predators such as raccoons, skunks, and coyotes cause damage to property or pets or present safety or health (e.g., disease transmission) risks to people. The important concept to convey here is that the need for PDM can occur anywhere in the State where predator species occur and where there is also present something of interest or value to humans that can be affected by a predator. The various predator species included in the scope of this EA do not all occur in the same types of habitats or areas. For example, black bears and mountain lions do not generally occur in the eastern plains portion of the State because they tend to prefer mountainous and/or more forested habitats. Thus, "typical" locations where PDM for those species is generally needed tend to be limited to areas in or close to those kinds of habitats. However, the coyote, which is the species that is the subject of the majority of PDM activity by WS in the State, occurs statewide in virtually all habitat areas, including many urban and suburban environments. Thus, "typical" areas where PDM to resolve coyote damage problems may be needed can be almost any location or type of habitat in the State.

We have done the analyses in the final EA and herein so that they can reasonably apply to almost any location in the State where we could be asked to perform PDM. Therefore, any requests for us to conduct PDM in almost any "new" area (i.e., an area in which we have not conducted PDM before or in recent years and did not anticipate being requested to conduct PDM in the area) would be a normal or "typical" area for PDM activity. We know of no site-specific environmental aspects in such areas that would be significantly adversely affected by WS PDM, given the nature of our program, methods, and SOPs. Thus, virtually all of the locations where

we have conducted PDM in the past, and most, if not all, of the locations on which we could reasonably expect to conduct PDM in the future have been adequately evaluated and analyzed in the final EA and herein. Even though locations we might work in the future are not yet identified, the analysis of impacts applies to those areas and supports a conclusion of no significant impacts similar to the conclusions we have made for those areas where we have conducted PDM actions in the past and for which we have thoroughly analyzed and evaluated the effects on them resulting from our PDM actions. Obviously, if we indeed do encounter or are made aware of a very different area or location from those we have typically worked on in the past or expect to possibly work in the future, and/or if there were quite different or new factors or aspects that we have not analyzed or evaluated in our EAs, then we would not proceed to provide any wildlife services in such areas until those very different locations and/or new, unique, factors or aspects were appropriately evaluated and analyzed and all the appropriate NEPA procedural requirements were correctly met.

There is yet another aspect of site-specificity that bears further explanation here. That aspect is the unique and particular nature of the "human environment" involved with wildlife damage management issues and activities (discussed further below under Issue 4). The "human environment" with respect to PDM actions and activities in Colorado includes important and considerable legal authority by State agencies and laws allowing private individuals to conduct PDM actions independent of any federal involvement whatsoever by WS. This was described and discussed in detail in Section 2.1.2. It is logical to assume non-Federal entities (State and local governments as well as private associations and/or individuals) would not just sit by and allow predator damage to their different agricultural, property, and/or human health and safety interests, or the interests of their respective constituents, to occur unaddressed and create unacceptable damages or problems if WS chose not to or was unable to assist in managing predator problems. Therefore, we would naturally expect such non-Federal entities to conduct increased levels of PDM in the absence of any assistance by WS. We also would expect such non-Federal entities to increase their PDM activities if WS was more restricted in the methods it can use in providing PDM assistance. Furthermore, there is strong anecdotal evidence to support a reasonable prediction that some private entities would undoubtedly resort to unacceptable and/or illegal and more environmentally harmful methods (e.g., illegal pesticide uses) in attempts to control predator damage to their interests if WS was more restricted or curtailed in our ability to provide assistance to address such damage or problems. Therefore, we reasonably concluded that, in certain locations or areas and especially compared to private actions and activities, the Current Program Alternative with APHIS-WS being involved would likely have the least amount of adverse impact on the human environment.

Again, to the extent possible in light of the nature and characteristics of the species affected by our PDM actions, we have fully informed the public of where we typically have done and probably will do PDM actions in the future and have analyzed all the potential effects of our PDM actions related to such typical locations and areas. Thus, we indeed have, to the extent possible because of the nature of the type of actions we are requested to take by Federal, State, and local governments as well as by private groups and/or specific individuals, evaluated and effectively addressed the site-specific issues of our PDM actions in the final EA. We have even further explained to the public our analysis, review, and treatment of them here in this FONSI. Our analyses of site-specific issues in the final EA and in our discussion here clearly demonstrate that we have indeed taken a hard look at the relevant environmental concerns and impacts of our PDM actions in Colorado. These analyses fully support and justify our reasonable determination that the environmental effects resulting from our proposed PDM actions in Colorado are not significant and that there is no reasonable need to prepare an environmental impact statement for these proposed actions.

We have thereby determined that indeed we have effectively and adequately shown by the analyses in the final EA and herein also that PDM as conducted by our program in Colorado will not cause any significant adverse effects on any aspect of the quality of the human environment in any location of the State where we have conducted such actions, nor in any area where we would expect to conduct PDM in the future. In conclusion, the analyses in the EAs and here in this Decision provide adequate evidence that the nature of the WS PDM program in Colorado, the methods it uses, and the SOPs that it employs are appropriate and sufficient to avoid significant adverse environmental effects on the quality of the human environment at the Statewide level and also at more site-specific levels such as Counties, BLM Resource Areas, and National Forests. Based on the above discussion, we have adequately covered site-specific issues and the applicable environmental concerns to the extent reasonable and practical for a Federal program of this nature.

Issue 2: Cumulative Impacts have been Thoroughly Analyzed and Considered in the Final EA.

A commenter stated that we did not look at the cumulative impacts to wildlife in the analysis area or at the site-specific level, especially for Federal public lands. The commenter specifically wanted additional information on the cumulative impacts from WS PDM activities combined with other impacts to wildlife such as hunting, land and resource use, and developmental activities including oil and gas development, logging, grazing, urbanization, commercial and recreational development (e.g., ski areas) at the site-specific and county level. However the commenter is clearly wrong. The analysis of cumulative impacts in the EA is quite adequate since we have indeed considered the cumulative impacts to wildlife from sportsmen harvest, private permitted PDM (i.e., aerial hunting) and WS PDM in Section 4.1.1.1., and the cumulative impacts of land-use activities in Section 2.3.4. We will not repeat here all the analyses regarding cumulative impacts in those sections. The reader should refer to those sections for the detailed analyses.

It is extremely important to recognize that indeed most of the wildlife species impacted and/or affected by almost all land-use activities, e.g., timber harvesting, grazing, or oil and gas development, are not likewise affected or impacted by WS PDM actions. In other words, almost all land-use activities seldom if ever impact or affect the same wildlife species that WS PDM actions do impact and affect and vice versa. Thus, almost all land-use activities in Colorado do not add to any effects (direct, indirect, or cumulative) of WS PDM actions and vice versa. (See Table 15 in the EA). Additionally, the above discussion of Issue 1 explains why our analysis of cumulative impacts applies adequately at the site-specific level as well as on a State-wide basis.

The commenter expressed a concern that coyotes may be cumulatively "overexploited." That particular cumulative impact issue is addressed under Issue 3 below.

Considering that the "status quo" human environment in Colorado includes substantial levels of coyote take by non-Federal entities, and there is every reason to think that this non-Federal coyote take would continue at similar levels, if we were to discontinue our PDM actions. So, it is apparent that whether we conduct PDM or not, the "status quo" for the human environment with respect to coyote populations within the State and at more local levels would remain the same. Therefore, a decision here to continue our current program with respect to coyote damage management should not result in much, if any, substantive change to the environmental status quo that would exist in the absence of WS's Federal involvement. Also, we have adequately considered and evaluated the cumulative impacts associated with our PDM actions in Colorado.

Issue 3: Possible Overexploitation of Coyotes at the County Level has Been Adequately Considered and Analyzed.

A commenter expressed a concern that coyotes may be "overexploited" (i.e., where total "take" or mortality exceeds the level that the population can withstand and sustain itself over the long term) in some counties of Colorado and that further site-specific analysis was needed.

The concern that coyotes may be "overexploited" at the County level is unfounded. Sections 2.2.1.1 and 4.1.1.1 of the EA describe the nature of coyote populations and the evidence that coyote populations easily withstand and recover from virtually any levels of human-caused mortality due to reproduction and immigration from surrounding areas. Also, the Final EA shows coyote population trends were found to be relatively stable in two counties (Moffat and Routt) where WS aerial hunting occurs most on the two major types of federal public lands where WS aerial hunting occurs (BLM and USFS lands) (see Figure 6 in Section 4.1.1.1 in the EA), which provides strong evidence that cumulative levels of coyote take have been sustainable by the populations in those areas. It further provides evidence that lesser levels of coyote take in other counties where WS conducts lesser amounts of PDM activity are not enough to cause "overexploitation." Nevertheless, we have further added additional analysis herein to demonstrate the impacts on coyote populations at the County level as requested by the commenter.

Appendix C attached to this Decision document contains known harvest and PDM take mortality of coyotes in each County in Colorado. Private hunter harvest is obtained annually by CDOW annually when they conduct a small game harvest survey by phone. However, CDOW typically receives only a small number of responses at the individual county level for some counties. For example, to obtain data for the 2003/04 Small Game Harvest Report (CDOW 2005), CDOW drew a sample of approximately 12% of the hunters in the Harvest Information Program (HIP) database (8,300 of 67,979 hunters were drawn). CDOW surveyors were able to contact 4,704 of the hunters (57% response rate) and obtained information from them on harvest. Of the hunters contacted, 663 reported that they hunted coyotes. Thus, an average of 10 hunters were surveyed for each County. CDOW (2005) notes that "due to the small number of hunters who 1) hunt certain small game species, 2) may have hunted a given species in a given county, and 3) been contacted for the harvest survey, our county harvest estimates may be based on the responses of only 1 or 2 hunters." This factor is important when looking at county surveys to accurately predict harvest because such a low number of responses in a given County can produce distorted or grossly inaccurate estimates.

For purposes of the analysis here, an average of the cumulative take/harvest for each County over a 3-year average is used in the calculations. For WS the average comes from the actual numbers of coyotes taken by WS during FY02 to FY04. The average for hunter harvest comes from the 2000-01 to 2004-05 hunting seasons (hunting seasons correspond with the federal fiscal year) or 5 annual hunting seasons. Since harvest estimates at the County level for some individual years can be unreliable and have unrealistic numbers (e.g., Delta County had a maximum harvest in FY04 of 15,391 which is unrealistic because it would suggest far more coyotes were killed by hunters than published density estimates show would even exist; and Phillips County had a minimum harvest of 0 in FY01 although 300 to 900 were reported killed in all other years), we eliminated the minimum and maximum numbers reported in any one year for each County during the 5-year period and used the remaining 3 years to determine an average annual harvest estimate. We assumed that calculating the average County level estimates of coyote take by entities other than

WS in this way would provide a more reasonable estimate that is less likely to be distorted or "skewed" by data that is obviously in error for certain individual years.

We stated in the EA that an assumption of 1 coyote/mi² (see Section 2.2.1.1 of the EA) provides a reasonable estimate of pre-whelping (just prior to the birth of pups in the spring) coyote populations in Colorado. Based on the information and analysis we presented in Section 4.1.1.1 of the EA, it is reasonable to assume that if harvest exceeds 70% of the pre-whelping population on a sustained basis for two or more years in a row, then the population may be headed towards complete removal based on the model by Pitt et al. (2001)¹.

Additional information suggests a more conservative assumption for pre-whelping coyote population densities for Colorado. Hein and Andelt (1995) estimated average daily coyote density on the Rocky Mountain Arsenal near Denver, Colorado to be 1.8 per mi.² but that a total population of 73 coyotes actually used the 27 mi.² study area, suggesting a density as high as 2.7 per mi.². Gese et al. (1989) reported a pre-whelping density estimate of 0.73 per mi.² (0.29 coyotes per km.²) at the Pinon Canyon Maneuver site in southeastern Colorado. Coyote populations generally fluctuate annually with minimum populations occurring immediately before the birth of pups (whelping) in the spring, while maximum populations occur immediately after (post-whelping) (Knowlton 1972). Andelt (unpublished 1996) estimated coyote numbers in the state to be about 75,000 before whelping and about 200,000 immediately after whelping. These numbers represent average minimum and maximum yearly densities of 0.72 per mi.² and 1.9 per mi.², respectively. Andelt's pre-whelping estimate was based on the Gese et al. (1989) pre-whelping density estimate of 0.73 per mi.² shown above, and is more conservative than the 1 per mi.² we assumed in the EA. Andelt's post-whelping estimate was based on a projection calculated under several assumptions of reproductive parameters (sex ratio of 1:1, 50% of females breed, and average litter size of 6 pups). His post-whelping estimate is approximately equal to ours presented in the EA (204,000, Section 2.1.1.1). Since Andelt's pre-whelping population density assumption is more conservative than ours, we use it here for purposes of evaluating county level coyote population impacts, which should err on the side of overstating such impacts. We also use Andelt's assumptions for reproductive parameters shown above.

Appendix C shows the results of our additional county-level analysis. For all but two counties the data and analysis show that average coyote take from all known sources has been below the level that would suggest possible "overexploitation." The two counties where possible overexploitation was suggested were Arapaho and Morgan. WS did not conduct any PDM in Morgan County, thus WS has not contributed to any cumulative effects on coyote populations in that county. In Arapaho County, the estimated amount of "overkill" is 65 coyotes which is 11% of the estimated pre-whelping population of 579 coyotes. WS's average take in that county has been only 25 coyotes per year, and has contributed only 3.3% of the total harvest/take by private hunters and WS PDM combined. Thus, curtailing WS's take in Arapaho County would not change the status quo significantly for coyotes in that County.

However, there is other evidence to indicate the coyote populations in Arapaho and Morgan Counties are not at risk for significant declines. For example, our calculations do not take into account immigration of coyotes from surrounding areas which is a known factor that adds to the ability of coyote populations to recover from mortality (see Section 2.1.1.1 of the Final EA; Knowlton 1972; Pitt et al. 2001; Connolly and Longhurst 1975). In support of the premise that immigration should naturally mitigate for any declines in coyote numbers, the counties adjacent

¹ This does not mean that localized complete removal of a coyote population would necessarily result in a significant effect on the human environment because immigration from surrounding areas can be expected to replenish the population (Knowlton 1972). Localized removal of coyotes would generally only be short-term.

to Arapaho (Adams, Douglas, Elbert, and Washington) and to Morgan (Weld, Logan, Adams, Washington) Counties all appear to have "underexploited" coyote populations according to the analysis in Appendix C, which indicates there are adequate numbers of coyotes available to immigrate from those adjacent county areas into Arapaho and Morgan Counties. Also, our calculations assume only 50% of females breeding, but studies show that parameter can be expected to increase dramatically up to about 80% as coyote populations are reduced (Knowlton 1972; Knowlton and Stoddart 1983) which would, by itself, make up for a deficit caused by the average levels of take occurring in either of the two Counties according to the model in Appendix C. Also, the trend in harvest data for both Counties has been stable or increasing (See "other take" columns for FY 01-05 in Appendix C), which provides an indication that the local populations have remained large enough to provide consistent to increasing hunter harvest opportunities. Therefore, there is adequate evidence to support that the coyote populations in Arapaho and Morgan counties are not being significantly affected by known human-caused mortality. In conclusion, we have determined that there is little likelihood of any cumulatively significant effects on the quality of the human environment at the County or other localized level because of coyote removal by WS.

Issue 4: The Environmental Baseline Established in the Final EA Is Appropriate and Accurate

A commenter was concerned that our characterization of the "environmental baseline" was an attempt to "skimp" and "betray NEPA's hard look requirement." The comment implies a misunderstanding of the analysis aspects of NEPA's procedural requirements. As clearly proper, we described the environmental baseline for the human environment that is affected by PDM in Colorado as being non-pristine in Section 2.1.2. This is because the areas impacted and affected by PDM in Colorado have been heavily human-influenced and are not characterized by the pristine conditions of over a century ago. This characterization is indeed correct and accurate because even remote wilderness areas have been exposed to influences by man, and, to name just a few of the significant human influences, they include, in particular, recreational activities, hunting, livestock grazing, and historical fire protection.

Furthermore, it is relevant and important to describe the "environmental status quo" in the absence of Federal action by WS as the baseline to which we should compare the effects of WS PDM (see Section 2.1.2 and the discussion above for Issue one regarding "site-specificity"). The unique and particular nature of the human environment involved in this situation is that we can expect considerable PDM activity to occur in Colorado whether WS is involved or not because State agencies and private individuals have the legal authority under State law to conduct such actions independent of WS. Because WS currently charges cooperators about 50% of the cost of providing PDM services in the State, it is also obvious that there are considerable resources and means to independently conduct such PDM actions by these non-Federal entities. This means WS has less ability to affect the environmental outcome than a Federal action agency would often have since in other types of federal action situations no action at all will occur if the Federal agency does not provide all the funds and other resources necessary for the particular project. We cannot definitively predict or quantify the precise amount of PDM that would occur without WS's federal involvement, but it is reasonable to expect similar, if not equal, levels of PDM would occur. This is the environmental baseline, and it is reasonable, realistic, and important to have a clear understanding of the baseline human environment which is the reality in which we conduct PDM actions and by which we have to evaluate and compare the effects of our Federal WS PDM activities. For example, with regard to the aspect of evaluating and determining "site-specific" environmental effects, the environmental baseline amounts to the fact that for most, if not almost all, site-specific locations where WS is requested to conduct PDM, it is reasonably foreseeable

that whether WS chooses to assist or not, the "human environment" is likely to be affected at least somewhat, if not on similar levels, by someone conducting PDM actions with similar, or perhaps even worse, effects on target and nontarget wildlife and/or other aspects of the environment.

Recognizing the environmental baseline by no means limits or negates the NEPA procedural requirement for detailed analysis of all the potential environmental impacts resulting from our proposed PDM actions and for taking a "hard look" at all potential environmental effects. We have done just that in the two EAs prepared for our proposed PDM actions in Colorado as well as fully reviewing, considering, and responding to all the relevant environmental concerns raised by commenters to either one of the EAs. In conclusion, we have carefully and fully evaluated and analyzed all the potential environmental effects of our proposed PDM actions and have determined that those potential environmental effects will not have significant impacts on those aspects of the human environment affected by our proposed PDM actions and will thereby also have little potential to result in significant changes to the baseline human environment.

Issue 5: We have Analyzed the Impact of WS's use of Lead Shot on the Environment.

A commenter stated that: "... lead pollution and toxicity to wildlife have not been adequately addressed by WS. How much lead does WS deposit in site-specific areas?"

In Section 3.4.4.2 of the final EA, we present information and analysis about the potential for effects of lead shot used in aerial hunting to present a risk to eagles scavenging on coyotes shot by WS during aerial hunting actions and concluded the risk is minimal. To respond to the specific issues raised regarding lead shot, we present further analysis here in reference to the deposition of lead shot used by WS in aerial hunting activities.

In general, sport hunting using rifles or shotguns, which would be similar in nature to aerial hunting with regard to dispersal of lead shot, tends to spread lead over wide areas and at low concentrations (Craig et al. 1999). The primary concerns raised thus far about sport hunting and lead shot contamination have been focused on aquatic areas where waterfowl hunting occurs, and the feeding habits of many species of waterfowl that result in them picking up and ingesting shot from the bottoms of ponds, lakes, and marshes. Shooting of lead shot in dry land upland areas has not raised similar levels of concern except where such activities are more intensively concentrated such as those which can occur with dove hunting at harvested crop fields and with game bird hunting at "shooting preserves" (Kendall et al. 1996). In an ecological risk assessment of lead shot exposure in non-waterfowl bird species, ingestion of lead shot was identified as the exposure mode of concern rather than just contact with lead shot or lead leaching from lead shot distributed in the environment (Kendall et al. 1996). Shots fired during aerial hunting are scattered in distribution over relatively wide areas in remote uninhabited locations where contact with humans or ingestion by birds picking up grit to aid in digestion of food are highly unlikely.

The amount of lead deposited on the landscape from the firing of shotguns during aerial hunting operations is very small since the amount of land area involved is huge. In section 2.3.2.3 of the EA, we reported that the number of shots fired by WS with shotguns during aerial hunting activities is less than 10,000 rounds per year in the entire State. Those shots are not highly concentrated in small areas, but rather are scattered over considerable portions of the landscape. Although WS aerial hunting operations only occur on small proportions of the land area of the State (4%), of BLM grazing allotment acreage (11%), and of USFS land area (less than 2%), the amounts of land encompassed by those small proportions of the total land area are still very large areas in the context of the potential for such lead shot to cause environmental concerns. In terms of actual acres, those large land proportions constitute approximately 2.7 million acres of area

over which the 10,000 lead shots occur. However, we also report in the EA (section 1.1.2) that it is likely that only 1/5 of the land area of the properties aerially hunted by WS actually receive any exposure to aerial hunting. Even under that assumption, the land area of exposure to shots fired is still relatively large in relation to the amount of shot distributed -- more than 530,000 acres. When shotshells with lead are used in aerial hunting, the typical amount of lead distributed by each shot is from 1.2 to 1.5 ounces, or from 34.0 to 42.5 grams. This means WS aerial hunting deposits approximately only from 340 to 425 kilograms, or 750 to 940 lbs., of lead over about 530,000 acres in Colorado in a typical year. This amounts to an average of only about one fiftieth (1/50) of an ounce (approximately .023 to .028 oz. or approximately .65 to .79 grams) of lead per acre aerially hunted in a typical year. This would amount to approximately only one single ounce of lead for each fifty acre tract of land that has been aerially hunted. Needless to say, if WS' aerial hunting activities in Colorado distribute approximately a single ounce of lead shot per each fifty acres of land area, such an amount is an incredibly small amount of lead to provide any potential effects at all to the human environment affected by WS' aerial hunting activities in Colorado. Nevertheless, to address even the most extremely unrealistic concerns raised regarding this issue, we have looked at the following detailed scientific facts and data related to any potential exposure of lead resulting from the lead shot used by WS' aerial hunting activities in Colorado.

The hazard standard set by EPA for lead concentrations in residential soils is 400 ppm (parts per million, equivalent to mg/kg) (.0064 oz./lb.) in childrens' play areas, and 1,200 ppm on average for the rest of a residential yard². We are unaware of any established standards for lead contamination of soil in remote rural areas of the kind where WS conducts aerial hunting activities, but it is reasonable to assume the guideline for residential areas would be more stringent than any such standard that might ever be established for remote rural areas. Laidlaw et al. (2005) reported that, because of the low mobility of lead in soil, all of the lead that accumulates on the surface layer of the soil is generally retained within the top 20 cm (about 8 inches). A representative average weight of soil is in the range of 110 lbs. (49.9 kg) per cubic foot (Environmental Working Group [undated]). The number of cubic feet of soil in the top 8 inches of soil in one acre is about 29,000. Therefore, a reasonable estimate of the total weight of the top layer of soil per acre where spent lead shot should remain would be 3.2 million lbs. (110 X 29,000) or 1.5 million kg. If considered over the amount of land area involved in aerial hunting in the State during a typical year, the amount of lead distributed from WS aerial hunting activities would constitute an average of about 0.00043 to 0.00053 mg per kg of soil. This is an infinitesimally small fraction (i.e., less than one-750 thousandth to one-2 millionth) of the concentration in the EPA hazard standards for residential area soils shown above.

Viewed yet another way, we can estimate the amount of lead in each of the spots on the ground where the soil is impacted by lead shot, and then put into perspective the risk of a person encountering one of those spots and becoming exposed to toxic levels of lead. The amount of lead in the soil impact zones of each shot taken would be calculated as follows: Each shot distributes 1.2 to 1.5 ounces, or 34.0 to 42.5 grams of lead into an approximate 30" circle, which is about 5 ft.². Under the same assumptions of weight per cubic foot of soil and depth of soil in which the lead shot would remain shown above, the amount of lead per unit weight of soil in the 5 ft.² circle would be about 200 to 260 mg/kg (ppm). Therefore, even if a person were to come into contact with one of the impact spots on the ground, the amount of lead in the soil would average less than the EPA hazard standard for children's play areas. The chances of someone stumbling across one of the impact spots could be calculated as follows: there are 10,000 5-square-foot impact spots (shots per year) distributed over 530,000 acres, or more than 23 billion

² The EPA soil-lead hazard is bare soil on residential real property or on the property of a child occupied facility that contains total lead equal to or exceeding 400 parts per million (mg/g) in a play area or average of 1,200 parts per million of bare soil in the rest of the yard based on soil samples. 40 CFR 745.65(c)

square feet, of landscape – this means that the total area of impact spots for any one year are only one-460,000th of the area of the affected landscape. After 100 years, the number of impact spots would accumulate to only one-4600th of the area of the affected landscape. It would be highly unlikely for a person to stumble across one of the affected impact spots, but, even if someone did, there would be no health risk unless the person ingested some of the soil (which people, obviously do not normally do) and the portion ingested contained some lead eroded from the spent shot. Solid lead exposed to the environment tends to form an oxidizing layer that slows down its ability to be dissolved in water (Craig et al. 1999), which means the lead from spent shot in the soil would tend to remain in place and not distribute throughout the soil. This would further lessen the chance that someone contacting an impact spot would become exposed to a lead hazard.

A reasonable estimate of the amount of lead deposited by small game hunters would be in the range of about 125,000 lbs. distributed over the entire State³. Considering the land area of the State is about 104,000 mi.² or about 66.5 million acres, the average amount of shot distributed per acre is about .03 ounces or 0.9 g per acre per year. Assuming this lead shot deposition rate by private small game harvesters occurs on the same areas aerially hunted by WS, the total cumulative amount of lead deposited on average on the areas aerially hunted by WS is about 1.7 grams of lead per acre per year. Using the same calculations and assumptions shown above for estimating WS's lead shot deposition per kg of soil, we find that this cumulative amount of lead deposited still would average only about 0.001 mg/kg (equivalent to ppm) of soil. That amount is still far below the EPA hazard standard of 400 ppm to 1200 ppm of soil established for residential soils. Soil uncontaminated by human activities generally contains lead levels up to about 50 ppm (or 50 mg/kg) (ASTDR 2005). Assuming that the soils in the areas aerially hunted by WS have the upper limit of this baseline level, it would take an additional 350 mg/kg to reach the EPA hazard standard for children's playgrounds, and 1,150 mg/kg to reach the standard for other residential yard areas. It would take from 350,000 to 1.2 million years at the rates of deposition shown here for lead amounts in the soil of the remote areas involved in aerial hunting to cumulatively reach or exceed the hazard standards for residential soils.

A remaining question is whether lead shot deposited in remote areas by WS aerial hunting might lead to contamination of water, either ground water or surface water via runoff that occurs during or following rainfall or melting snow cover. Stansley et al. (1992) found that lead did not appear to "transport" readily in surface water when soils are neutral or slightly alkaline in pH (i.e., not acidic), but that it will transport more readily under slightly acidic conditions. In their study, they looked at lead levels in water that was subjected directly to high concentrations of lead shot accumulation because of intensive target shooting at several shooting ranges. Although they detected elevated lead levels in water in a stream and a marsh that were in the shot "fall zones", they did not find higher lead levels in a lake into which the stream drained, except for one sample collected near a parking lot where it was believed the lead contamination was due to water runoff from the parking lot, and not from the shooting range areas. Their study indicated that even when lead shot is highly accumulated in areas with permanent water bodies present, the lead does not necessarily cause elevated lead contamination of water further downstream. They also reported that muscle samples from two species of fish collected in the water bodies with high lead shot accumulations had lead levels that were well below the accepted threshold standard of safety for

³ Total number of small game animals that would most likely have been harvested by use of shotguns (blue grouse, bobwhite quail, cottontail rabbit, crow, gambel's quail, scaled quail, mourning dove, pheasant) totaled 405,702 in 2004 (data from CDOW files, L. Stevens, pers. comm. 2005). At an average of 3 shots fired per animal harvested for all species except mourning doves for which it is estimated that 5-8 shots are fired per dove taken (Lewis and Legler 1968) and for which we therefore estimated that 6 rounds are fired per dove on average for this analysis, the total number of shots fired to harvest the 405,702 animals would be about 1.8 million. At 1 ounce of shot per shell fired, the amount of lead distributed into the environment would be 2 million ounces or 125,000 lbs.

human consumption (Stansley et al. 1992). Craig et al. (1999) reported that lead levels in water draining away from a shooting range with high accumulations of lead bullets in the soil of the impact areas were far below the EPA's "action level" (i.e., requiring action to treat the water to remove lead) of 15 ppb ("parts per billion"). They reported that the dissolution (i.e., capability of dissolving in water) of lead declines when lead oxides form on the surface areas of the spent bullets and fragments in the impact areas. This means "transport" of lead from bullets or shot distributed across the landscape is reduced once the bullets and shot form these crusty lead oxide deposits on their surfaces, which serves to naturally further reduce the potential for ground or surface water contamination. These studies suggest that, given the very low and highly scattered shot concentrations that occur from WS's aerial hunting activities, as well as most other forms of dry land small game hunting in general, lead contamination of water from such sources would be minimal to nonexistent.

Based on the above analysis, we conclude that the amounts of lead deposited by WS in aerial hunting operations, even when considered cumulatively with the amounts deposited by hunters, are far below any level that would pose any risk to public health or of significant contamination of water supplies.

In a review of lead toxicity threats to the California condor, CBD et al. (2004) concluded that lead deposits in soils, including those caused by target shooting by the military at shooting ranges on military reservations used by condors, did not pose significant threats to the condor. The concern was that lead might bio-accumulate in herbivores that fed on plants that might uptake the lead from the soil where the target ranges were located. However, CBD et al. (2004) reported blood samples from condors that foraged at the military reservation where the target shooting occurred did not show elevated lead levels, and, in fact showed lower lead levels than samples from condors using other areas. Because lead deposited by WS's aerial hunting activities is widely scattered in comparison to military shooting ranges, it is clear that, despite valid concerns about other sources of lead toxicity in the environment, lead deposited onto the landscape by WS should not cause any significant impacts on wildlife, nor should it contribute in any significant way to cumulative impacts from other sources of lead shot deposited by sport hunting.

There appears to be a growing body of evidence that lead bullets and shot remaining in carcasses of animals that are shot but not removed from the landscape can pose lead toxicity problems for scavenging California condors (CBD 2004). Three condors from the Experimental Population Area established by the U.S. Fish and Wildlife Service (USFWS) in northern Arizona traveled to the Grand Junction, Colorado area briefly in 1998 and then returned to the Experimental Population area in Arizona. Since then, for example, WS has restricted M-44 use in certain "corridor" areas (like the Colorado River "corridor") where and at certain times of the year when the reintroduced experimental condors might travel and leave the Experimental Population Area. WS has voluntarily restricted aerial hunting to use of non-toxic shot and to remove and dispose of coyote carcasses shot from the ground with lead ammunition in areas occupied by condors, and relies on the USFWS and the Peregrine Fund (which is under an agreement with the USFWS to monitor condors) to determine occupied areas.

No evidence has been brought forth to indicate that any animals killed during PDM by WS have resulted in any indirect lead poisoning of condors or other scavenging animals. The analysis of the potential for effects on scavenging eagles we presented in Section 3.4.4.2 of the EA provides evidence that scavenging eagles are probably not at risk of being poisoned by coyote carcasses that are aurally hunted by WS. At the present time, no known condors are in Colorado. However, we will continue to monitor reports from the Condor reintroduction program to be informed if any condors again travel into Colorado. We will then determine if we expect to

conduct any shooting activities involving the use of lead bullets or shot in the areas where condors occur or are expected to occur in the State and will consult with the USFWS at that time to determine appropriate measures to reduce or eliminate the risk of indirect lead poisoning from WS activities. Measures that would be implemented at that time will include switching to non-toxic shot and/or bullets, retrieval and disposal of animal carcasses shot with lead ammunition, or, if practical, retrieval of any lead bullets from such carcasses. We believe this adaptive management approach should be sufficient to avoid lead toxicity effects on reintroduced condors.

Issue 6: The Analysis of Aerial Hunting Overflight Impacts to Wildlife is Adequate

A commenter expressed concerns about several recent studies or reviews of aircraft noise or overflight effects on various wildlife: e.g., Goudie and Jones (2004) study of harlequin ducks which showed a ceasing of courtship behavior for 1.5 hours and engaging in agonistic (i.e., aggressive) behavior for up to 2 hours following military jet overflights; a 2002 paper (Frid 2003) on Dall's sheep responses to aircraft overflights which the commenter reported can cause "various reactions" depending on the proximity of the aircraft; a 2003 review paper on aircraft noise effects on humans and wildlife (Pepper et al. 2003).

It is significant that none of the studies cited by the commenter evaluated population effects of aircraft overflights on the species studied, but only inferred the potential for some level of effect based on the disturbance behaviors noted. In section 2.3.2 of the EA, we presented detailed analysis showing that few, if any studies have proven that aircraft overflights cause significant adverse impacts on wildlife populations. Therefore, the three studies introduced by the commenter do not add any substantial new information to change that conclusion, and we are thus making no change to our analysis based on those newly mentioned studies.

We thoroughly discussed and considered the potential environmental effects of aircraft overflights on waterfowl in Section 2.3.2.1 of the EA where we reported that WS aerial hunting activities are not conducted over wetland habitats, and a majority of such flights occur in winter when waterfowl and waterbirds have migrated further south. Thus, there is little to no potential for any adverse effects from WS overflights on these types of species. Also, the harlequin duck (the subject of Goudie and Jones 2004), does not occur in Colorado; thus there is no potential for WS activities in Colorado to affect that species. The study reported that the behavioral responses noted occurred at military aircraft noise levels at or above 80 dBA. In section 2.3.2.1 we described the noise level of the airplane used in WS aerial hunting as being only 65 dBA when directly beneath the aircraft flying 500 feet overhead. Therefore, noise levels of WS aircraft are far below the levels documented in the study cited by the commenter, further indicating low potential for WS's overflights to cause serious effects on the species studied even if such flights were to occur where the species occurs.

Regarding the second study cited on overflight effects on Dall's sheep (Frid 2002), Dall's sheep do not occur in Colorado. Thus, there is little to no potential for any adverse effects from WS overflights on that species. In section 2.3.2.1 of the EA, we reviewed studies of aircraft overflight effects on bighorn sheep and concluded WS overflights have little potential to affect that particular sheep species.

We reviewed Pepper et al. (2003) and found no new evidence of significant adverse effects on wildlife than what we have already considered in the EA in section 2.3.2.1. The paper mainly focused on civilian commercial and military aircraft that produce much louder noise levels than the aircraft used by WS in Colorado. One conclusion of the paper was that evidence of cause-and-effect relationships between aircraft noise and negative impacts on wildlife was weak and merited further study.

Issue 7: We Have Adequately Considered and Analyzed Selectivity of PDM methods in targeting depredating species and individual animals

One commenter incorrectly stated that WS uses indiscriminate PDM methods and claimed that aerial gunning, calling and shooting, traps, and poisons are neither species-specific nor do these practices target the predator actually preying on livestock.

The commenter is clearly wrong in trying to claim that aerial gunning and calling/shooting are not species-specific. Those methods which involve visually sighting and identifying target species before shots are taken with firearms are virtually 100% selective for target species (we stated this in our discussion of potential effects on lynx in Section 2.2.2.1). Also, WS's use of traps, snares, and M-44s has been very selective for target species - Table 6 in the EA shows nontarget take has been very low during the past 5 years, averaging 15 nontarget animals captured and only 10 killed in any one year State-wide. To further address this issue, we consulted with John Shivik, Station Leader with the WS National Wildlife Research Center and Research Associate Professor (Letter to T. Hall 11/9/05). Dr. Shivik stated:

This issue comes up repeatedly, primarily because of the term selective, which has many different meanings to different people.

Selective removal can mean removal of "the animal that has killed and is currently killing livestock," (e.g., classifying some coyotes as "good" and others as "criminals" or "culprits"). It can also mean removing "a predatory animal that is likely to kill livestock." In the least restrictive sense, some people could even argue that selective removal means "killing only predatory animals."

There are different interpretations of what is "likely to kill," for instance and thus there are different degrees of selectivity. Because in some studies (Till and Knowlton 1983) territorial breeders with pups were found to kill most sheep, some authors (Blejwas 2002 et al.) considered selective removal as "the death of a breeding coyote in a territory where depredations were occurring." Selectivity for them meant selectively removing a territorial, breeding coyote, because these animals were shown to be more likely to be responsible for most kills.

However selective can also refer to removing "a coyote that has access to a territory with sheep," because Blejwas et al. (2002) found that "all pairs with access to sheep eventually killed sheep," and that the overriding factor that determines lamb kills was the availability of lambs within a territory. Blejwas found no evidence, much like Linnell et al. (1999), that there are not "good," non-sheep killing coyotes and "bad" sheep killing coyotes. If given the chance, most coyotes are likely to be, or become, coyotes that kill sheep; thus, removing any coyote in an area where sheep occur can be considered selective removal.

The definition for selective removal that I like to use is "removal which is designed to ensure that coyotes and sheep do not occupy the same place at the same time." In contrast, if coyotes are removed from areas where they are not likely to encounter livestock, this would be nonselective. Similarly, if non-predatory species are removed from in and around livestock, then this would be nonselective control. If WS is using lethal tools that specifically target coyotes in sheep areas then their management methods are selective.

Lastly, the question of how selective particular tools are is not necessarily an inherent quality of the tool, but rather how the tool is used. There is nothing inherently non-selective about traps, toxicants, or aerial work. Actually, traps, M-44s, and shooting are extremely selective in terms of targeting a particular species in a particular area, such as coyotes on sheep bed grounds. Interestingly, there is no method more selective, even at the most restrictive definition of the word, than poison used in a livestock protection collar. These collars only kill predators that are in the act of killing livestock.

In contrast, non-lethal methods can be quite nonselective. Fencing limits travel by all species, for instance, and frightening devices will frighten deer and other species too. Their application should be considered as carefully as when using lethal methods.

The commenter has also expressed the desire that only nonlethal methods be used in PDM. However, as Dr. Shivik has pointed out above, such methods can be quite nonselective in their effects on target and nontarget species. Additionally, Section 3.3.6 in the EA and the Nonlethal Program Only Alternative in the programmatic EIS (USDA 1997) provides ample discussion why the sole use of only nonlethal PDM methods is frequently not a viable approach to resolving many predator damage situations.

Issue 8: It is Appropriate to Have Government-Provided PDM Services.

A commenter stated that "WS omits the fact that predators are 'publicly-owned' resources. The public is forced to pay for PDM at their own expense." The issue expressed here appears to be opposition to using taxpayer funds to pay for PDM. Obviously, there are perennially debated issues related to whenever the Federal government provides some or all of the monies to address or deal with a particular problem or resource, whether that resource is a 'publicly-owned' resource or not. This environmental decision document is certainly not the appropriate or effective forum to discuss, much less address, such non-environmental "fiscal" and public policy issues, and we have no intention to do so. We will note, however, that we think the commenter has identified one of the primary justifications for government-provided wildlife damage management services. It is true that wildlife are "publicly-owned," however that fact suggests the public should bear at least some responsibility for paying the costs of controlling damage caused to private interests by publicly owned wildlife. Conversely, another commenter involved with livestock production stated this very reason in support of continuing the current WS PDM program. Because private landowners own considerable areas of wildlife habitat in the State, resolving damage caused by wildlife can be important to maintaining wildlife resources, because landowners frustrated by unresolved problems of this nature may resort to selling their land to developers. IAFWA (2004) determined that if someone was not involved in managing damage caused by wildlife the public would likely become intolerant of damage and wildlife. Therefore, public ownership of wildlife provides an impetus for the need for action. Also, the public does not bear all costs for WS PDM services. Currently, the costs of WS PDM actions conducted for livestock producers in Colorado are supported by at least 50% cooperative (non-Federal) funds, and individual producers must provide 50% of the cost of aerial hunting services.

Issue 9: WS Has Implemented Adequate Safeguards to Assure That Chemical Toxicants and Aircraft Held by WS Will Not be Stolen and Used by Terrorists.

A commenter expressed concern that chemicals and aircraft held by WS may be stolen and used by terrorists. The commenter is perhaps referring to audits of APHIS and WS by the U.S. Department of Agriculture, Office of Inspector General (OIG) in 2004. The audits related to (1)

WS's Controls Over Hazardous Materials Inventory, (2) Security Over APHIS's Owned and Leased Aircraft, and (3) APHIS-WS's Aircraft Acquisition. This is a non-issue since WS has implemented and continues to implement recommendations for enhancing security of hazardous materials and aircraft identified in the audit reports. Thus, we believe we have taken the necessary and reasonable steps to provide adequate security for preventing theft of WS aircraft and hazardous materials.

Major Issues

WS, cooperating agencies, and the public helped identify a variety of issues deemed relevant to the scope of this final EA. These issues were consolidated into the following 4 primary issues that were considered in detail in the final EA:

- Effects on Target Predator Species Populations
- Effects on Nontarget Species Populations, Including T&E Species
- Impacts on Public Safety, Pets, and the Environment
- Effects of PDM, especially Aerial Hunting Activities, on the Use of Public Lands for Recreation

Affected Environment

The proposed action in the final EA is to continue WS's current program of PDM throughout Colorado where predators are found to be injurious and/or a nuisance to the human environment, e.g., causing or threatening damage to agriculture, property, natural resources, or public health and safety on public, Tribal, and private properties in Colorado. PDM will only be conducted where the appropriate Agreement for Control or Work Plan is in place allowing PDM methods to be used. The EA describes the variety of land-ownership types, including private, state, BLM and USFS lands where WS PDM has occurred and may be needed in the future. As of the end of January 2005, WS had active cooperative agreements in place on approximately 19% of the State's total land area. However, WS conducts PDM activities on only a portion of these properties annually. In FY04, WS took target predators by PDM actions on properties from about 4% of the total land area of Colorado. The current program's goal and responsibility is to provide, when possible, the appropriate and effective level of service when requested within the constraints of available funding, manpower, and any applicable laws and regulations.

Alternatives Analyzed in Detail

Five potential alternatives were developed to address the issues identified above. Five additional alternatives were considered, but not analyzed in detail. A detailed discussion of the anticipated effects of the alternatives on the objectives and issues is described in Chapter 4 of the EA. The following summary provides a brief description of each alternative and its anticipated impacts.

Alternative 1 - Modified Current Program, the "Proposed Alternative

This is the "No Action" alternative as defined by CEQ for ongoing programs. This alternative would allow the current program to continue as conducted under the existing Western Colorado and Eastern Colorado EAs (WS 1997b, 1999a, 2001). However, a statewide EA would replace the Eastern and Western Colorado EAs. WS would continue to provide PDM statewide within the scope of the analysis in the EA. Consideration of the No Action alternative is required under 40 CFR 1502.14(d), and provides a baseline for comparing the potential effects of all the other alternatives. In this EA, the "No Action" alternative is consistent with CEQ's definition. In the

case of the PDM EA for Colorado, the No Action Alternative was the equivalent of the Proposed Action Alternative and the Current Program. Alternative 1 benefits individual resource owners/managers, while resulting in only low levels of impact on target and nontarget wildlife populations including T&E species, minimal potential to adversely impact ecosystems, and very low risks to or conflicts with the public and public recreation. Current lethal methods available for use are fairly selective for target species and appear to present a balanced approach to the issue of humaneness when all facets of the issue are considered.

Under the current program, WS responds to requests for PDM to protect livestock, other agricultural resources, human health and safety, property, and natural resources including threatened and endangered species in the State of Colorado. A major component of the current program is the protection of agriculture, especially livestock, from predation. WS has the objective of responding to all requests for assistance with, at a minimum, technical assistance or self-help advice, or, where appropriate and when cooperative or congressional funding is available, direct damage management assistance with professional WS Specialists conducting damage management actions. An IWDM approach would be implemented which allows the use of any legal technique or method, used singly or in combination, to meet the needs of requestors for resolving conflicts with predatory mammals. Agricultural producers and others requesting assistance would be provided with information regarding the use of effective nonlethal and lethal techniques as appropriate. In many situations, the implementation of nonlethal methods such as fences and animal husbandry techniques would be the responsibility of the requestor to implement which means that, in those situations, WS's only function would be to implement methods difficult for the requestor to implement, if determined to be necessary. PDM by WS would be allowed in the State, when requested, on private, Tribal, and public property where a need has been documented, and where an agreement or other similar instrument, as appropriate, has been established. All management actions would comply with applicable Federal, state, and local laws.

Alternative 2 - No Federal WS PDM

This alternative would consist of no Federal involvement in PDM in Colorado. Neither direct operational PDM nor technical assistance to provide information on nonlethal or lethal PDM techniques would be available from WS. A portion of the formerly Federal PDM responsibility would be borne by the remaining state agency programs within CDOW and CDA. Private individuals would be expected to increase their efforts as allowed by State law which means more PDM would be conducted by persons with less experience and training, and with little oversight or supervision. The use of specific control techniques, leghold traps, snares, aerial hunting, shooting, M-44s, and cage traps, by other agencies and private individuals would still be subject to State restrictions under Amendment 14. Risks to the public, nontarget and T&E species, and public lands and associated recreational activities would probably be greater than under Alternative 1, and effectiveness and selectivity would probably be lower. The use of illegal or inappropriate techniques by frustrated resource owners or managers may increase under this alternative and result in an increase in adverse effects.

Alternative 3 - Technical Assistance Only

Under this alternative, WS would not provide any direct control assistance to persons experiencing predator damage problems, but would instead provide advice, recommendations, and limited technical supplies and equipment. Lethal PDM would likely be conducted by persons with little or no experience and training, and with little oversight or supervision. Risks to the public, nontarget and T&E species, and public lands and associated recreational activities would

probably be more than Alternative 1, but slightly less than or about the same as Alternative 2. Effectiveness in resolving predator damage problems and selectivity of PDM actions in targeting damage-causing species or individuals would probably be lower than under Alternatives 1, 4, and 5, but somewhat greater than under Alternative 2. The use of illegal or inappropriate techniques by frustrated resource owners or managers may increase under this alternative and result in an increase in adverse effects.

Alternative 4 - Nonlethal Required before Lethal Control

This alternative would not allow the use of lethal methods by WS as described under the proposed action until nonlethal methods had been attempted. Private landowners and state agencies would still have the option of implementing their own lethal control measures. Risks to or conflicts with the public and target species would be about the same as Alternative 1. Risks to nontarget and T&E species would probably be somewhat greater than Alternative 1, but slightly less than or about the same as Alternative 2 or 3. Program effectiveness would probably be lower than Alternative 1. Personnel experienced in PDM often already know when and where practical nonlethal control techniques would work. Therefore, this alternative could result in the use of methods that are known to be ineffective in particular situations. Selectivity of PDM methods under this alternative would likely be less than Alternative 1 if WS's reduced effectiveness led to greater PDM efforts by less experienced and proficient private individuals, but greater than Alternatives 2 and 3. The use of illegal or inappropriate methods, and adverse effects associated with such methods, would probably be similar to or slightly higher than that which would occur under Alternative 1, but less than under Alternative 2.

Alternative 5 - Corrective Control Only When Lethal PDM Methods are Used

This alternative would require livestock depredation or other resource damage by predators to have already occurred before the initiation of lethal control. Alternative 5 would not allow WS to conduct preventive operational PDM. Therefore, WS would have less potential to conflict with public and pet health and safety, or on other aspects of the environment since fewer lethal PDM activities would be allowed. Most preventive work in Colorado by WS is focused on areas with historic loss of livestock to coyotes and red fox. Much of this work is conducted with aerial hunting in concert with other ground-based PDM methods. If WS stops conducting preventive PDM, private PDM actions including aerial hunting, would likely increase in these historic loss areas, and would likely be implemented by individuals with less experience than WS personnel potentially resulting in greater impacts on nontarget species and/or on public or pet safety. Cumulative impacts would probably be similar to or less than those that would occur under the No Program Alternative. Impacts and risks from illegal chemical toxicant use under this alternative would probably be similar to or slightly greater than the proposed action, similar to Alternatives 3 and 4, but less than the No Program Alternative.

Alternatives considered but not analyzed in detail were:

- Compensation for Predator Damage Losses
- Bounties
- Eradication and Long Term Population Suppression
- The Humane Society of the United States Alternative
- No PDM Within any Wilderness or Proposed Wilderness
- Non-lethal Control Only

Management Techniques Not Considered for Use in IWDM:

- Mountain Lion Sport Harvest Alternative
- Relocation Rather Than Killing Problem Wildlife
- Immunocontraceptives or Sterilization Should Be Used Instead of Lethal PDM
- Lithium Chloride as an Aversive Agent

Comments regarding the Alternative Selection

The 30 day Public Comment Period for the final EA for PDM actions in Colorado ended on November 23, 2005. There were only two comments received on the final EA for PDM actions in Colorado. One of the two commenters on the Final EA stated their preferred Alternative would be to continue and expand the Current Program (Alternative 1). The other commenter raised certain issues that have been addressed in the Final EA and further in the issues discussed above in this document, but did not State their preferred alternative.

There was a 39 day Public Comment Period for the June 2005 pre-decisional EA for PDM actions in Colorado. There were six comments received in reference to the June 2005 pre-decisional EA. Four of the six commenters on the pre-decisional EA listed their preferred alternatives as:

1. Support the Proposed Action (Alternative 1) - two commenters.
2. Support No Federal WS PDM (Alternative 2).
3. Support Nonlethal Required before Lethal Control (Alternative 4).

Determination of a Finding of No Significant Impact

The analyses, evaluations, and determinations in the June 2005 pre-decisional EA, in the final EA, as well as in this decision document with its three appendices, all thoroughly indicate that there will not be any significant impacts, individually or cumulatively, on the quality of the human environment as a result of the Proposed Action. As the agency's environmental decision-maker for this proposed action, I have reviewed the two EAs analyzing all the potential environmental impacts resulting from WS' PDM actions in Colorado. I have also reviewed all the public comments received on them as well as the agency's environmental experts' analyses and responses to the issues raised by those comments as discussed in this document and its appendices. Based on my review and evaluation of all of the above, I have determined that the proposed action for PDM actions in Colorado should not have any significant impacts on the human environment that could be potentially affected by such proposed action. Accordingly, I have determined that this Finding of No Significant Impact (FONSI) is the appropriate environmental decision to make in reference to the proposed WS PDM actions in Colorado. Thus, I have determined and decided that an Environmental Impact Statement need not be prepared for this proposed action. Furthermore, taking into account the CEQ regulations' test to determine whether there are any "significant" impacts pursuant to the CEQ regulations at 40 C.F.R. Sec. 1508.27, my determination of this FONSI is based on the following factors:

1. PDM, as conducted by WS in Colorado, is not regional or national in scope. It is a statewide program and the scope was discussed thoroughly in the EA. Under the proposed Action, WS would continue to assist entities with predator damage as necessary. Even if WS were not involved, under state law PDM will apparently be conducted by state or local government, or private entities that are not subject to compliance with NEPA.

2. The proposed action would pose minimal risk to public health and safety. No injuries to any member of the public are known to have resulted from WS PDM activities in Colorado. In addition, a risk assessment of PDM methods used by WS (Appendix P in USDA 1997) found that they pose only minimal risks to the public, pets and nontarget wildlife species. This issue was addressed in the EA and the Proposed Action was found to present minimal potential for any adverse impacts.

3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected by WS PDM in Colorado. As discussed in the EA, WS under the Proposed Action Alternative could conduct PDM in wilderness or other special management areas if and when needed but PDM is expected to be needed in relatively few such areas in any one year and would not conflict with the goals or requirements for management of such areas. Annual coordination with land and wildlife management agencies would afford adequate opportunity for changes in circumstances requiring changes in PDM to avoid conflicts, should any be identified.

4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to predator control, this action is not highly controversial in terms of size, nature, or effect. Predator and nontarget species populations will not be significantly affected by PDM under the Proposed Action, but effects on such populations may be more uncertain under the other Alternatives depending on the efforts of other individuals to conduct PDM and the potential for illegal use of toxicants.

5. Based on the analysis documented in the EA, the effects of the proposed PDM program on the human environment are not highly uncertain and do not involve unique or unknown risks. The other Alternatives could potentially involve unique and unknown risks by non-professionals implementing PDM and frustrated private individuals that have been ineffective with PDM methods potentially resorting to use of illegal methods.

6. The proposed action would not establish a precedent for any future action with significant effects. The nature of predator damage management is such that it can be curtailed at any time without automatically leading to other Federal actions that may have significant environmental effects.

7. No significant cumulative effects on the quality of the human environment were identified through the EA.

8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.

9. An evaluation of the proposed action and its effects on T&E species determined that no significant adverse effects would occur to such species. This is supported by the 1992 Biological Opinion (USDA 1997) and a subsequent Biological Opinion from USFWS (2005) covering the lynx.


10. The proposed action would be in compliance with all Federal, State, and local laws imposed for the protection of the environment.

11. There are no irreversible or irretrievable resource commitments identified by this assessment, except for a minor consumption of fossil fuels and other materials for routine operations.

Decision

I have carefully reviewed the EAs for this proposed action, all the input resulting from the public involvement process for this proposed action, and all the analyses and evaluations in this document itself in reference to the proposed action for WS' PDM activities in Colorado. I believe the issues and objectives identified in the final EA for PDM actions in Colorado would be best addressed through implementation of Alternative 1 (the proposed action to continue the current program). Alternative 1 is therefore selected because it offers, within current program funding constraints, the greatest chance at maximizing effectiveness and benefits to resource owners and managers and other individuals affected by predator damage while minimizing risk to or conflicts with the public, and while also minimizing risks and impacts to target and nontarget species populations including T&E species and to other aspects of the human environment. WS in Colorado will continue to use an Integrated Wildlife Damage Management approach in conducting PDM activities in compliance with all of the applicable standard operating procedures listed in Chapter 3 of the EA.

For additional information regarding this decision, please contact Mike Yeary, USDA-APHIS-WS, 12345 West Alameda Parkway, Suite 204 Lakewood, CO 80228 (303) 236-5821.


Jeffrey S. Green, Regional Director
APHIS-WS Western Region

12/16/05
Date

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APPENDIX A

SUMMARY OF COMMENTS RECEIVED FOR THE FINAL AND PRE-DECISIONAL COLORADO 2005 APHIS-WS PREDATOR DAMAGE MANAGEMENT (PDM) ENVIRONMENTAL ASSESSMENT

Comment Letters Received for Final PDM EA:

1. Sinapu - Wendy Keefover-Ring (Director Carnivore Protection Prog.) on behalf of AGRO Plaintiffs
2. Colorado Wool Growers Association - John Bartmann (President)

Comments Received on Pre-decisional PDM EA

3. Sierra Club - Timothy Snowden (Wildlife Chair Rocky Mountain Chapter)
4. Sinapu - Wendy Keefover-Ring (Director Carnivore Protection Prog.) on behalf of AGRO Plaintiffs
5. Jean Belille (representing herself, but identified herself as working for U.S. Federal Environmental Justice Program)
6. Colorado Wool Growers Association - John Bartmann (President)
7. Colorado Cattlemen's Association - Bill Gray (President)
8. David Wegner (member of La Plata County Animal Damage Control Advisory Committee)

Letter: Pg	Comment	Response
Comments Regarding the EA in General		
1: 3 4:19	The EA did not analyze any cumulative impacts, site-specific impacts, or any of the biological, physical, sociocultural, and economic qualities of the environments impacted by WS PDM	<p>Issues and Affected Environment - Environmental Analysis - The EA adequately addressed all of these in different parts of the EA.</p> <p>Cumulative actions were defined in Section 2.1.4 and similar actions in 2.1.5, and both were discussed in cumulative impacts analysis. Section 2.3.2.5 discusses the cumulative effects of aircraft overflights on wildlife. Section 2.3.4 discusses the cumulative effects on wildlife populations from land development and uses such as oil and gas development, timber harvesting, land development, and grazing. Sections 4.1.1.1 and 4.1.2.1 analyzes the known cumulative target and nontarget species take in PDM. Additional discussion and clarification has been included in the Decision document.</p> <p>Site-specificity was first discussed in Section 1.6.5. Site-specific areas where WS aerial hunts were included in Section 2.3.2.4. Site-specific information was also discussed in Section 4.1.4.1. Additional discussion and clarification has been added to the Decision document.</p> <p>The Biological impacts were addressed in Sections 2.2.1, 2.2.2, 2.2.3, and other areas in Chapter 2. The primary biological impacts of PDM (target and nontarget species take) were analyzed in Sections 4.1.1 and 4.1.2.</p> <p>Physical resource impacts were addressed in Section 2.1.6.</p> <p>Sociocultural and economic impacts were addressed. The EA covers a number of relevant social, cultural, and economic issues in Sections 2.2.5.3 (effects on private recreational and commercial fur harvest), 2.3.4 (effects on public land recreation), 2.3.9</p>

Letter: Pg	Comment	Response
		(aesthetic values of wildlife), 2.3.11 (American Indian and cultural resource concerns), 2.3.15 (cost-effectiveness of PDM). We believe the analysis of social and economic effects as they are related to environmental effects and the consideration of effects on cultural resources is adequate.
Comments Associated with the Need for Action (Chapter 1)		
1: 2 8: 3	WS failed to analyze the scope of its program including such programs as aquatic rodent and prairie dog damage management.	Purpose - Section 1.1 clearly spells out the scope of the EA which is predator damage management (PDM) in Colorado. Wildlife damage management programs other than PDM are outside the scope of this EA.
1: 2, 12	Commenter thought that analogy of WS and fire and police departments was inappropriate.	Need for Action - This analogy was discussed in section 1.6.5 on Site-specificity. We disagree -- the analogy is appropriate and important to understanding the practical problems associated with meeting the need for site-specific analysis in a program of this nature. The issue of site-specificity has been further discussed and clarified in the Decision document.
1: 4 4: 3	Few livestock are killed by predators, especially compared to those killed by other causes.	Need for Action - Livestock Losses - Livestock losses in Colorado are discussed in Section 1.3.2.2 of the EA. Also, this comment implies a misunderstanding of the goals of PDM which are to prevent further or future losses of livestock. Thus livestock producers generally do not wait for losses to accumulate to some high level before taking PDM action or requesting WS assistance, but attempt to act before such losses become severe. The more important factor is the number of livestock saved from predation by PDM activities. Although difficult to accurately quantify, we present information on the amount of losses that are prevented by PDM in sections 1.3.2.2 and 2.3.15.
1: 7	Wool and sheep markets have declined making it uneconomical to raise sheep.	Need for Action - Wool and sheep markets have declined in the U.S., but with some recent positive fluctuations. However, sheep production still occurs in the State and the authority provided by Congress allows us to assist sheep producers with predation problems. Our purpose is to meet the intent of Congress by providing assistance in resolving damage problems caused by publicly owned wildlife. Struggling sheep producers in general have a greater need for PDM assistance. Until Congress changes or revokes our authority, we plan to continue providing such assistance.
1- 9	Scientifically inaccurate information, WS confines descriptions of disease transmission from wildlife to livestock and not vice versa.	Need for Action - The EA (Section 1.3.2.2) discusses the potential for disease to be transmitted from predators to wildlife because this would be a need for PDM that would fall within the authority provided to us by Congress. WS's authority does not include controlling livestock that carry wildlife diseases.
1: 9	CDOW study found coyotes were only a minor factor in mule deer fawn mortality. WS claims it benefits pronghorn populations on Anderson Mesa, AZ, but livestock were more of a limiting factor.	Need for Action - Predators are not always a limiting factor in the decline of another species. However, many studies have found that predators are a limiting factor for many species including mule deer. CDOW published an article in 1999 stating that coyotes were the primary cause of deer fawn deaths in one study in Colorado (Buchanan 1999). Section 1.3.3.6 adequately discusses this need for action. Also, we would only assist in providing PDM for protection of mule deer or pronghorn when

Letter: Pg	Comment	Response
		requested by the agency with management authority over those species. Thus, CDOW or a Tribe would be expected to determine the need for such assistance before we would provide it.
2: 1	Colorado's livestock producers and farmers own about half of the land area in the State and must shoulder the burden of rapidly expanding predator populations	Need for Action - WS provides PDM for livestock protection where a need exists and cooperative funding is available; this was described in Section 1.1.2. Damage caused by predators and the need for action was discussed in Section 1.3 of the EA. Populations of predators were addressed in Section 2.2.1.
4: 3-5	WS failed to demonstrate a purpose and need for PDM.	Issue - Need for Action - we describe purpose and need in Chapter 1 of the EA.
4: 5	The goal of IWDM is to reduce damage to a tolerable level. What is a tolerable level?	Issue - Need for Action - "tolerable" is a subjective determination that must be made by the entity experiencing predator damage. It varies case-by-case because of different perceptions and economic conditions that affect the ability of the individual entities to "withstand" losses. Since our mission is to improve the coexistence of people and wildlife, we generally strive to reduce predator damage to levels that are "tolerable" by each individual requester.
4: 12-15	Authorities to regulate wildlife are borne by many agencies. Commenter infers that WS has little authority to conduct wildlife damage management, primarily on BLM and USFS lands.	Issue - whether WS has adequate authority to conduct PDM, especially on BLM and USFS lands - We agree with the commenter that wildlife are regulated by many agencies. WS cooperates with these agencies as appropriate. WS and other agency authorities regarding wildlife and wildlife damage management are discussed adequately in the EA in Section 1.7.1. The Decision document also describes WS authorities.
4: 62-63	WS's discussion of PDM protecting upland game birds such as sage grouse greatly concerns us. The loss of habitat from fires, grazing and so on is likely to blame for population declines.	Issue - Need for Action - PDM for the Protection of Upland Game - Section 1.3.3.6 adequately discusses the need for PDM to protect upland game.
6: 1	Predators continue to have a devastating impact on the sheep industry in Colorado causing 5 to 30% lamb loss for individual ranchers.	Issue - Need for Action - This is a need for action adequately discussed in Section 1.3.2 of the EA.
7: 1	WS should provide more PDM for T&E and sensitive species.	Need for Action - Wildlife Protection - WS provides protection for T&E and sensitive species at the request of the managing agency or Tribe.
8: 3	There is no mention of the role of county government in WS PDM.	Need for Action - Request for WS PDM Services - WS is a cooperative program and works with counties as is discussed in Section 1.7.1 of the EA.

Comments Associated with the Issues (Chapter 2)

1: 2, 3 4:16	Need more site-specific information. WS Decision Model (Slate et al. 1992) is vague.	Issue - site-specificity - this is addressed in the EA and in greater detail in USDA (1997), plus further discussion and clarification of our treatment of site-specificity has been added in the Decision document.
1: 2	The EA states that WS has active agreements in place on about 19%	Issue - Geographic Scope of Action - Target Species Impacts - Section 1.1.2 adequately discusses the lands worked in PDM by

Letter: Pg	Comment	Response
	of the lands in the State and concludes that WS therefore impacts only a small portion of the predator population	WS in Colorado. WS conducts PDM on less than 5% of the acreage in Colorado, a small portion of the State. Section 4.1.1.1 contains considerable analysis to show impacts on predator species populations are insignificant. Additional information and discussion on county-level coyote population impacts has been added in the Decision document.
1: 2	Intense clustering of aerial hunting overflights and PDM programs amass impacts on the same populations over and again.	Issues - Target Species Impacts - Aerial Hunting Overflights Impacts on Wildlife - The EA adequately addresses this issue. WS analyzed the potential for aerial hunting overflights (Section 2.3.2) and found that no significant impact would occur to wildlife from WS aerial hunting activities even where PDM activities are most frequent. Chapters 2 and 4 contain considerable information and analysis to show impacts on predator species populations are insignificant, even if some members are removed year after year, because populations can sustain themselves even at sometimes relatively high levels of harvest or control. Additional information and discussion on county-level coyote population impacts has been added in the Decision document demonstrating no significant impact on populations at that level as a result of WS PDM.
1: 11, 12	WS never identifies the site-specific areas where aerial hunting occurs (impacts from overflights and gunshot noise). WS identifies where aerial hunting occurs at county levels, but concentrated aerial hunting affects wildlife populations in counties with aerial hunting.	Issues - Target Species Impacts - Aerial Hunting Overflights Impacts on Wildlife - We analyzed the potential for aerial hunting overflights and gunshot noise (Section 2.3.2) and found that no significant impact would occur to wildlife from WS aerial hunting activities. Tables 10 and 11 in that Section identify the federal land grazing allotments WS aerially hunts. Additional information and discussion has been added to the Decision document to identify site-specific BLM and FS grazing allotments we anticipate are likely to be aerially hunted in the future. Chapter 4 (Section 4.1.1.1) of the EA adequately addresses the issue of impacts on target species that are aerially hunted. Cumulative aerial hunting impacts are analyzed in Section 2.3.2.5.
1: 12	WS omits the fact that predators are "publicly-owned" resources. The public is forced to pay for PDM at their own expense.	Issue - Taxpayer Burden (socio-economic issue related to the Need for Action) - Appropriateness of Government-Provided PDM - Section 2.3 of the EA refers to previous EAs (WS 1997, 1999, and 2001) where the issue of whether taxpayers should pay for PDM assistance was previously addressed. Further discussion and clarification on these issues has been added to the Decision document.
2-1	The public has responsibility to protect resources from publicly-owned wildlife.	
1: 13	New studies are available about impacts to wildlife from aircraft overflights (Pepper et al. 2003, Goudie and Jones 2004, Frid 2003).	Issue - Aerial Hunting Overflight Impacts to Wildlife - This issue was addressed in detail in Section 2.3.2. Additional discussion and consideration of these additional studies has been added to the Decision document. No changes in conclusions about impacts from aircraft overflights were found to be necessary as a result of reviewing and considering these additional studies.
1: 3	PDM methods can have local environmental impacts other than to wildlife populations	Issue - Environmental Impacts from PDM Methods - Environmental impacts are broad in scope and relevant impacts are covered throughout the EA. Several issues not related to

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		wildlife impacts are discussed in section 2.2.3 (impacts on health and safety) and section 4.1.4 (impacts on public recreation); Sections 2.3.8, 2.3.12 also discuss non-wildlife environmental issues. We believe relevant environmental concerns and issues have been adequately considered and analyzed in the EA. The analysis supports a conclusion that the impacts are not significant.
1: 4, 7 4: 7-12	Colorado has undergone extensive socio-economic changes over the last decades and the EA relies on data from the late 1980's to justify PDM.	Issues - Need for Action - Effects on social and economic interests - The EA cites numerous livestock predation loss studies from the 1970s and 1980s because those years were when the majority of such studies were conducted. They are still relevant to discussions of the need for PDM. However, we also provide more recent data on livestock inventories and losses from the 1990s and since the year 2000 in discussing need. The EA also covers a number of relevant social, cultural, and economic issues in Sections 2.2.5.3 (effects on private recreational and commercial fur harvest), 2.3.4 (effects on public land recreation), 2.3.9 (aesthetic values of wildlife), 2.3.11 (American Indian and cultural resource concerns), 2.3.15 (cost-effectiveness of PDM). We believe the analysis of social and economic effects as they are related to environmental effects and the consideration of effects on cultural resources is adequate.
1: 4, 11, 4: 31-33	WS failed to adequately discuss its effects from its aerial gunning on wildlife populations including aerial hunting overflights.	Issues - Aerial Hunting Overflights Impact to Wildlife - Aerial hunting overflight impacts to wildlife were considered in-depth in Section 2.3.2. The Decision document discusses additional studies identified by commenter (Pepper et al. 2003, Goudie and Jones 2004, Frid 2003).
1: 9	Coyotes prevent meso-predators from irrupting thus protecting ground-nesting birds . . . coyotes reduce populations of Canada geese in Chicago.	Issue - Nontarget Species Impacts - Meso-predator Release - While the phenomena of meso-predator release has been documented in the absence of larger predators, this phenomenon would not likely result from WS's predator damage management efforts. This comment gave the impression that the commenter believes WS engages in general population suppression of coyotes across large areas of the State which is not the case. As noted in the EA (Section 4.1.1), WS removes only a minor portion of the coyote population during programs to reduce predation on livestock, and immigration and natural reproduction contribute to relatively rapid repopulation of areas where coyotes have been removed. Given the capabilities for rapid coyote repopulation of areas following localized control and sport harvest actions, we do not anticipate substantial impacts on other predator/omnivore populations (e.g. skunk, raccoons, fox). The commenter also noted that while coyotes probably do not prey on ground-nesting birds as much as smaller meso-predators, coyotes control Canada geese in some locations (e.g., Chicago) which appears to somewhat contradict their finding since Canada Geese are a ground-nesting bird species. We address the phenomenon of meso-predator "release" in section 2.3.2.1 and give reasons why we believe it would not lead to significant adverse effects on sage grouse due to the nature of the extent of WS's PDM activities.
1: 4 4: 78-79	WS failed to discuss how it's operations will not prevent attacks	Issue - Effects on public safety - Further discussion and clarification on this issue has been added to the EA. WS has

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	on humans from terrorists with WS poisons and unguarded aircraft.	implemented adequate safeguards to minimize the risk of chemical toxicants and aircraft being stolen.
1: 6	How will killing native carnivores alter plant communities?	Issue - Indirect Ecological Effects - The commenter is concerned that the killing of predators will allow rodents and other micro-herbivores or possibly ungulates to increase thereby affecting the plant communities in an area. We do not believe that this would occur because, as analyzed in Section 4.1.1.1, WS takes a minor portion of the predator populations, and will not likely impact any local population great enough or long enough to cause increases in herbivore prey species populations that would then lead to change in the floral communities. Section 2.3.14 analyzes this issue and presents reasons why WS PDM would not lead to this sort of ecosystem effect.
1: 6 4: 79 8: 3	How will killing native carnivores alter prey populations? What is the role of predators in controlling rodents? Will hantavirus increase [as a result of removal of coyotes]?	Issue - Indirect Ecological Effects - Same response as for the issue identified immediately preceding this issue. Additionally, Dr. John Shivik (Letter to T. Hall 11/9/05) addressed this issue and stated: <i>"Henke's (1995) review concluded that 'short-term coyote removal programs typically are not sufficient in reducing coyote density and, therefore do not alter ecosystem composition.' In some systems, the evidence is that prey populations limit coyotes, not the other way around. However, given intensive large scale reduction of coyote populations, there is some evidence also that there can be prey-base increases. If WS is not doing intensive, year-round removal, it is unlikely to be affecting micro-herbivore populations."</i> WS's PDM activities in Colorado do not occur year round (see section 2.3.14). Section 2.2.5.2 discusses why rodent populations are unlikely to increase as a result of coyote removal.
1: 7 4: 15, 16, 29- 33, 40- 41 1: 7 4: 43-46 1: 12 3: 2 3: 2 4: 89	WS uses indiscriminate PDM methods. Aerial gunning, calling and shooting, traps, and poisons are neither species-specific nor do these practices target the predator actually preying on livestock. WS PDM has profound negative impacts on the environment, species, and ecosystem balance. M-44s are indiscriminate, should be banned statewide because of T&E and sensitive species statewide Aerial hunting may not take the offending animal. Do not allow indiscriminate killing of wildlife.	Issue - Target and Nontarget Species Impacts - Selectivity of PDM lethal methods - We disagree with the commenter that aerial gunning and calling/shooting are not species-specific. Those methods which involve visually sighting and identifying target species before shots are taken with firearms are virtually 100% selective for target species (we stated this in our discussion of potential effects on lynx in Section 2.2.2.1). WS's use of traps, snares, and M-44s has been very selective for target species (see Table 6 in the EA). We consulted further with Dr. John Shivik, Station Leader with the WS National Wildlife Research Center and Research Associate Professor (Letter to T. Hall 11/9/05) and have added further discussion and clarification to the Decision document. The commenter has also expressed the desire that only nonlethal methods be used in PDM. However, as Dr. Shivik has pointed out above, such methods can be quite nonselective in their effects on target and nontarget species (Letter to T. Hall 11/9/05).

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1: 7	Livestock producers have no incentive to prevent losses from occurring because of the subsidized WS PDM program.	Issue - Government Subsidies - The commenter is opposed to WS PDM under the belief that the program is a subsidy to livestock producers. However, there is another compelling reason for government provided PDM services which is that the public should bear responsibility and cost for controlling damage caused by publicly owned wildlife. The EA presents information Section 1.3.2.2 to show producers in the State implement nonlethal PDM methods to a considerable degree. Therefore, this concern is unfounded.
1: 7 3: 2	Is it cost-effective to aerial hunt coyotes? How much does WS spend on PDM in Colorado. Costs (financial, social, and ecological) far outweigh the benefits (a few dead coyotes for a handful of livestock producers). Need cost-benefit analysis of each animal taken.	Issue - Costs in relation to benefits - although specific information to quantify benefits in terms of the value of losses avoided by conducting PDM in Colorado is not available, we present information on PDM costs and benefits in general in section 2.3.15. In general, benefits can be expected to exceed costs by a considerable degree.
1: 7 4: 33-38 8: 3	Lead is toxic to wildlife and WS aerial gunning deposits lead in site specific areas which has not adequately addressed the EA. WS should be required to use nontoxic shot because lead is a threat to California condors, other T&E species, and waterfowl.	Issue - Lead toxicity to Wildlife - This issue was analyzed in prior EAs (WS 1997, 1999) and further in this EA in Section 3.4.2.2 regarding potential to affect scavenging eagles. Additional analysis, discussion, and clarification on this issue have been added to the Decision document.
1: 8	WS overstates the conclusions of Gehrt and Clark (2003) on meso-predator release.	Issue - Meso-predator Release - We cited Gehrt and Clark (2003) as reporting that that meso-predator release may not occur for all meso-predator species. See response above (re comment letter 1 p. 9) on the issue of meso-predator release.
1: 11	WS must examine cumulative impacts of land an oil and gas development, and logging on wildlife populations impacted by PDM.	Issue - Cumulative Impacts - Cumulative impacts from land-use activities such as oil and gas development were adequately discussed in the EA in Section 2.3.4. Additional discussion and clarification on this issue has been added to the Decision document.
1: 14	The EA states that the environmental baseline sin Colorado is not pristine and human influenced (Section 2.1.2). Commenter believes that areas in the state are pristine and non-human influenced.	Issue - The Environmental Baseline - Section 2.1.2 adequately establishes the environmental baseline for the area affected by PDM. Additional discussion and clarification on this issue has been added to the Decision document to support our statement that most areas of the State have been and are continuing to be heavily human-influenced by a variety of human actions.
3: 2	Scent-post surveys were unreliable (USFWS 1979) and indices were unreliable.	Issue - Science Used for Analysis is Unreliable - Scent station survey data were discussed in Section 2.2.1.1 of the EA. The scent-post surveys were considered inaccurate for many species of predators, and were also statistically inadequate to show trends or relative abundance at the local level (e.g., for one or only a few scent station lines) (USFWS 1979). However, the scent-post surveys were used to provide relative abundance for coyotes over

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		broader areas (States) from data collected at the more than 400 scent-post survey lines that were conducted annually from 1972 to 1977 (USFWS 1978, Knowlton and Stoddard 1983). Knowlton and Stoddard (1983) compared several site-specific coyote density studies with data from the scent-post surveys. They found that relative abundance densities were consistent with the scent-post survey data and that local population density estimates could be extrapolated to broader level areas. Thus, the surveys provide relative abundance measures for coyotes that were reasonably reliable at the State or broader geographic scales.
3: 2	Nonindigenous species like raccoon and opossum are not beneficial to restoration of ecosystems and should be always be euthanized when caught, but humanely as possible.	Issue - Invasive Species - Raccoons and opossums (discussed in Sections 2.2.1.5 and 2.2.1.11) are native to certain portions of Colorado and have expanded their range or densities within the State from historically occupied areas. In most areas of the State, they would not be considered nonindigenous or invasive. PDM targeting most predators is guided by CDOW and CDA regulations. We would consider lethal removal of these species even when they are captured as nontargets if requested at some point in the future by the CDOW.
3: 3	PDM should not be conducted in wilderness areas	Issue - PDM Effects on Wilderness - This is addressed adequately in the EA in Sections 2.3.3, 2.3.8, and 3.3.5. It has also been discussed in previous EAs (WS 1997, 1999). PDM is not prohibited by most wilderness legislation and effects on predator populations would not be substantial enough to affect the continued existence of predator species in wilderness areas, should PDM be needed and then conducted within the boundaries of a wilderness area on occasion. Private individuals and State agencies can conduct PDM and sport hunting activities on wilderness areas under current Federal and State laws and regulations.
3: 3	PDM impacts biodiversity	Issue - Impact of PDM on Biodiversity – As referenced in Section 2.3 of the EA, this was adequately addressed in previous EAs (WS 1997, 1999). PDM, as conducted by WS, does not impact biodiversity.
3: 3	WS should research methods of identifying offending coyotes so that they are killed and not nonoffending coyotes that are not causing damage.	Issue – Selectivity of PDM methods - The Livestock Protection Collar is the most specific PDM method yet developed for targeting offending individual coyotes. The Livestock Protection Collar delivers a dose of a toxicant (Compound 1080) to a coyote when it is in the act of attacking the throat of a sheep or goat. However, that method is not currently registered for use in Colorado, would be highly restricted for use on private lands and would be prohibited on public lands by Amendment 14 (until or unless Amendment 14 is changed or is found inapplicable to certain types of methods applications). In some damage situations, for example, those involving predation by a denning pair of adult coyotes, the pair and their den location can be determined through eliciting howling responses and/or by skillful ground tracking (see section 3.2.1.2 of the final EA). In those situations, it is generally possible to remove the offending individual coyotes by calling/shooting, by aerial hunting, or, in some circumstances, by placement of traps or M-44 devices. The

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		National Wildlife Research Center has looked into methods of identifying offending individual predators (D. Nolte, NWRC, pers. comm., 2005). Although genetic analysis technology shows promise for identifying individual predators that have attacked and killed livestock or other animals, it is extremely costly and impractical to identify and then also remove such individual offending animals using such technology.
3: 3	Population estimates for mink (80,000) and ringtail (12,500) seem very high.	Issue: Target Species Populations - The EA estimated species' populations in Section 2.2.1.15 and 2.2.1.16 for these species. We used very conservative published density estimates and estimates of the current range of these species in Colorado to estimate these species' populations. Therefore, the estimates are considered reasonable.
4: 5 4: 80-81	How do we know that WS Specialists who have little oversight are accountable? WS engages in illegal acts.	Issue - WS Specialist Accountability - WS Specialists are held accountable for their actions and must abide by policy and regulations. Employees that violate policy are treated accordingly and are disciplined or dismissed to discourage similar infractions by others. Section 2.3.5 discusses an issue related to this (potential for WS personnel to trespass and conduct PDM in unauthorized areas).
4:16 4:56	Preventive PDM kills many animals not implicated in livestock killing and this has a destabilizing effect on dynamics in populations and ecosystems. WS is reluctant to discuss the adaptive behaviors of coyotes when they are exploited by humans.	Issue – Selectivity of PDM (in targeting offending individual predators) – Effects on Predator Species Populations – Effects on Ecosystems -- Section 3.2.1.2 discusses preventive PDM. Section 4.1.1.1 analyzes impacts to predator species populations from PDM. To further address these issues, we consulted with Dr. John Shivik, Station Leader with the WS National Wildlife Research Center and Research Associate Professor (Letter to T. Hall 11/9/05). Dr. Shivik stated: <i>"Anytime an animal is removed from a population, the demographics at the very small-scale, the local population, are affected. Managing populations or components of populations is a primary goal of modern Wildlife Management, and affecting demographics is often the point of management. In coyote populations that experience a great amount of removal, the demographics tend to be skewed toward younger age classes (Knowlton et al. 2002), but there is no evidence that the numbers or densities of coyotes are altered. I would agree that management could affect coyote demographics at an extremely small scale, but I would not agree that the populations are damaged or in any way limited. At the state or national scale at which Wildlife Services operates, I'd actually argue that the program has no significant effect on coyote demographics.</i> <i>It has been said that removing coyotes causes more coyotes to be produced the next year, however this is an oversimplification that isn't correct. The latest scientific thought is that coyotes do not produce more animals in response to control (Crabtree and Sheldon 1999). If there is more food and space available, more coyotes will be supported and densities could rise—that much is true. However, coyote carrying capacity is thought to be limited by food supply and intraspecific interactions. Removing coyotes usually results in no net change in the population, especially at the large scale. They are incredibly resilient animals. Indeed,</i>

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		<p>the removal of >70% of coyotes for multiple years is required for population reduction (Connolly 1978). This level of control at any but the smallest scales is beyond our capability (or desire) when using today's wildlife management tools.</p> <p>When coyotes and sheep are living in the same place, coyotes will kill sheep (Blejwas 2002), so modern management targets specific areas where coyotes and livestock are likely to come into conflict. That managers target problems and not populations is a point that even scientists sometimes miss; for example, the use of imprecise terminology (such as "Lethal control: population reduction") by Mitchell et al. (2004) highlights the need for a better understanding of current coyote predation management methods."</p>
4: 23	When animals are [preyed upon], the body releases endorphins which diminish some pain. What people find it objectionable that predators begin to feed on prey such as livestock while they are still alive?	Issue - Humaneness - This issue was adequately addressed in Section 2.2.5.1 of the EA and in prior EAs (WS 1997, 1999).
4: 23-24	WS does not believe it is important to address the public's concern about the perception of the diminishment of aesthetics.	Issue - Aesthetics - This was addressed in 2.1.1, 2.3.3, and 2.3.9, and previous EAs (WS 1997, 1999). WS's PDM actions will have no significant impact on any wildlife species' population; therefore, the ability of members of the public to experience aesthetic enjoyment of wildlife will not be significantly affected.
4: 19-22	The effects of livestock grazing and livestock damage to riparian areas and wildlife habitat is a "connected action" to WS's PDM activities.	Issue - Effects of Livestock Grazing as a Connected Action - This issue was adequately discussed in more detail in Section 2.3.8 of the Final EA. Grazing is not a connected action to WS's PDM activities.
4: 37-40	Compound 1080 livestock protection collar impacts nontarget wildlife.	Issue - Impacts of Compound 1080 - This PDM method is not used by Colorado WS and, therefore, is outside the scope of the EA.
4: 62-63	<i>"Coyotes keep smaller predator's populations low through competition and predation. These smaller predators (i.e. skunks, raccoons, and others) are more likely to prey on ground-nesting birds"</i> (Crooks and Soule 1999).	Issue - Meso-predator Release - As noted in the EA in Section 2.3.2, WS removes only a minor portion of the coyote population during programs to reduce predation on livestock, and immigration and natural reproduction contribute to relatively rapid repopulation of areas where coyotes have been removed. Crooks and Soule (1999) studied naturally occurring coyote loss from urban/suburban environments in which areas of suitable habitat were small and separated from one another due to "fragmentation" caused by human land development. As the habitat fragments became smaller, coyotes were not as likely to be found in them. That situation does not apply to the vast majority of the landscape in Colorado where WS conducts PDM activities. In the areas where WS conducts most PDM, coyote habitats are contiguous over broad areas (see Section 2.2.1.1 of the final EA) and there are almost always coyotes in areas surrounding PDM areas to immigrate into and repopulate those areas. Thus, there is little likelihood that meso-predator release would be a significant occurrence in the areas where WS conducts PDM actions.

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4: 63	The EA needs to consider impacts to all 500 species of birds living or migrating through Colorado. Raptors will be caught in PDM.	Issue - Nontarget Species Impacts - The EA considers the potential of PDM to impact nontarget species and its impacts in Sections 2.2.2 and 4.1.2.1. Table 6 in the EA shows all nontarget species killed and "freed" (i.e., captured and then freed alive) from FY 00 to FY 04 and no bird species or in particular raptor species, are among the species shown. Potential effects on specific T&E and "sensitive" bird species have been considered in Sections 2.2.2.2. Potential for PDM to affect bird species through "meso-predator release" is considered and discussed in several responses to issues above. Potential for WS aircraft overflights to affect wildlife, including bird species, is considered and analyzed in Section 2.3.2 and potential cumulative impacts on bird species identified by public land agencies as being affected by land management actions are considered in Section 2.3.4. Of note here regarding the comment, about 350 species of birds live or migrate through Colorado. About 150 other species are accidentals (observed 1 time) or rarely occur in Colorado because Colorado is outside their normal range. WS PDM has no potential to affect most of the bird species that might occur in Colorado, and the ones that might be affected are considered in the EA.
2: 1 6: 1	Passage of amendment 14 by a narrow margin of 3% severely restricted the ability of wool growers to protect sheep.	Issue - Need for Action - We agree Amendment 14 restricted sheep producers' and WS PDM activities, as well as PDM capabilities by all other entities in the State.
6: 1	When the government banned the use of Compound 1080, they acknowledged the responsibility to protect and support the livestock industry from predators with other PDM methods.	Issue - Need for Action - Government Responsibility to Assist Livestock Producers with PDM needs due to Government Restrictions on Methods -- We are aware of historical acknowledgements by Government officials to this effect.
6: 2	Human expansion encroaches on or eliminates wildlife habitat which heightens the importance of PDM.	Issue - Need for Action - Increased PDM Needs Because of Habitat Loss Resulting from Human Population Expansion and Land Development - We agree this is a reasonable component of the need for action.
7: 1	Curtailing WS PDM activities will cause livestock producers and rural communities to suffer.	Issue - Need for Action - Economic Benefits of PDM on Livestock Producers and Rural Communities - We discuss this issue in several areas of the EA (section 2.3.8). We acknowledge that some producers would suffer economically if they had to assume all costs for conducting PDM to protect their livestock. It is also reasonable to expect that, without Government PDM services, some producers might end up selling their properties to other livestock producers with better financial capabilities to conduct PDM or to withstand predation losses, or to land developers that would subdivide and build homes on former ranch properties resulting in other indirect and deleterious effects on wildlife caused by habitat loss and fragmentation (section 2.3.8).
8: 3	What are the impact of chemical toxicants and repellents to waterways?	Issue - Health and Safety Impacts - Impacts of chemicals to the environment are adequately addressed in Sections 2.3.3 and 4.1.3.1. Section 3.2.1.2 describes the chemicals used in PDM and USDA (1997, Appendix P) provides a risk assessment of the

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		chemicals used in PDM. PDM chemical methods as used by WS have no potential to adversely affect water quality.
8: 3	How does PDM relate to ongoing habitat management activities conducted by CDOW, CDOT, and other federal agencies.	Issue - Impacts to Habitat from PDM - Habitat management conducted in PDM is discussed in Section 3.2.1.2. and is conducted in areas that would not impact agency habitat projects such as at airports and lambing grounds.
Comments Associated with the Alternatives (Chapter 3)		
1: 2	PDM needs to be conducted so that species of special concern are not impacted	Issue – Effects on Nontarget Species – This is addressed in Section 2.2.2.
1:5 4: 24-26	Nonlethal control is more effective than lethal control (used Marin County, California as an example). Nonlethal methods effectively and humanely used ward off predators. When two or more methods are used in combination, nonlethal methods are even more effective.	Alternative - Nonlethal Control - This was discussed in the EA in Section 3.3.6. This alternative would have similar impacts to the technical assistance alternative discussed in Section 4.1.4.3 and analyzed in Chapter 4 for all of the issues. Nonlethal methods are used by livestock producers in Colorado to a considerable extent already as discussed in 1.3.2.2. Nonlethal methods have been given adequate consideration in the EA.
1:12	Mitigation methods to prevent lynx capture are inadequate.	Issue – Effects on Lynx - The SOPs for PDM including those specifically aimed at reducing the potential to incidentally capture a lynx are described in Section 3.4 and are based on a Biological Opinion from USFWS (2005). The SOPs minimize the potential for capturing lynx. Colorado WS has not taken a nontarget lynx either before or since their reintroduction into Colorado. Therefore, it is evident that current PDM practices have been adequate to prevent lynx capture.
2: 1	Aerial hunting is crucial to the effectiveness and efficiency of the WS PDM program.	Alternative - Aerial Hunting included in PDM Methods - Aerial hunting is a method incorporated for use in the Proposed Action Alternative and is adequately discussed in Section 3.2.1.2 of the EA.
2: 1 6:1	Public has an obligation to help prevent and compensate ranchers for predator losses since they passed Amendment 14 and restricted the available PDM methods. Public has an obligation to help prevent and compensate resource owners for predator damage.	Issue – Appropriateness of Government-provided PDM Service – This is previously addressed herein. Such service is appropriate since it allows the public to bear some responsibility for resolving predator damage to private interests caused by public wildlife. Alternative - Compensation Program - A compensation program alternative was considered in the EA in Section 3.3.1. No authority currently exists for WS to compensate producers for predator damage.
3: 2	Traps set a 30 foot distance from a carcass may not guarantee that an eagle will not be caught.	WS PDM SOPs - The SOPs for PDM including those specifically aimed at reducing the potential to incidentally capture an eagle are described in Section 3.4 and are based on a Biological Opinion from USFWS (USDA 1997). We believe that these SOPs minimize the potential for capturing an eagle. Colorado WS has not taken a nontarget eagle in PDM.
3: 2	Nonlethal methods such as cage traps should only be used where a possibility exists of capturing T&E	Issue – Effects on T&E and Sensitive Species -- Alternative – Nonlethal methods in T&E areas - SOPs to avoid T&E or sensitive species capture were outlined in Section 3.4 of the EA.

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	or sensitive species.	WS could use nonlethal methods such as cage traps when appropriate as part of the current program. Risks of taking a T&E or sensitive species are low as shown by the analysis in Section 4.1.2.
3: 2	No WS program because private enterprise could do the same job.	Alternative – No WS PDM - This was Alternative 2 in the EA, the No Federal WS PDM Program as described in Chapter 3 and analyzed in Chapter 4.
4: 22-23	PDM in wilderness violates the Wilderness Act.	Issue - No PDM in Wilderness – Violation of Wilderness Act - Section 3.3.5 of the EA addresses this issue. PDM is not prohibited by the Wilderness Act.
4: 27-29	Fertility controls should be used cautiously in PDM.	Alternative - Fertility Control - This alternative was considered in Section 3.3.7.3 of the EA.
6: 1	WS should be given additional funding because T&E species require WS to expend more time and effort conducting PDM (avoiding capture, frequent trap checks).	Issue - Nontarget Species Mitigations and Cost to WS Program - Ensuring that T&E species are not impacted by WS PDM activities can increase the costs of PDM. WS must abide by SOPs (Section 3.4) to avoid significant adverse impacts to these species. We agree that implementing restrictions to minimize risks to T&E and other sensitive species increases costs and would accept additional funding if provided by Congress.
Comments Associated with Analysis of Impacts (Chapter 4)		
1: 2 3: 3	EA did not look at site specific impacts to predators. Unprotected predators such as coyotes could be overexploited at the site-specific (counties) level.	Issue - Target Species Impacts - Site Specific Impacts -The Final EA provides site-specific information concerning federal public land areas where aerial hunting is conducted, and provides analysis to support that site-specific impacts on predator populations are not significant. Additional information and analysis has been added to the Decision document on this issue.
1: 2, 6 8: 3	PDM could have impacts on species of special concern. T&E, and species of special concern should be monitored in areas where PDM is implemented.	Issue - Nontarget Species Impacts - This issue was addressed adequately in Sections 2.2.2.2 and 4.1.2.1. Standard operating procedures to avoid taking nontargets, including species of concern & T&E species in PDM were addressed in Section 3.4. Based on our analysis, we do not expect to have any adverse impacts on T&E species or species of special concern, thus there is no need to go to the expense of monitoring such species in areas where PDM occurs. In the unlikely event that an incidental take of a T&E species occurs, then the USFWS would be consulted further to determine additional steps that might be necessary to avoid further adverse impacts.
1: 2 4: 29-31 4: 77-78	PDM has potential threats to human health and safety. Aerial hunting has significant impacts on human health and safety. M-44s threaten public safety.	Issue - Health and Safety - The EA addressed this issue adequately in Sections 2.2.3 and 4.1.3. Current standard operating procedures to minimize potential conflicts were addressed in Section 3.4. Additionally, USDA (1997-Appendix P) provides a risk assessment for methods used in wildlife damage management including those used in PDM that showed risks to the public are minimal. Section 4.1.3.1 contains considerable analysis and evidence to show that WS aerial hunting presents virtually no safety risks to the public, and has implemented considerable steps and SOPs to enhance the safety of its personnel.
1: 2	Cumulative impacts (PDM added	Issue - Target and Nontarget Species Impacts - Cumulative

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	to land-use activities such as oil and gas development, ski industry expansions, road-building, etc.) could impact wildlife and need to be considered.	Impacts to Wildlife - These were adequately discussed throughout the EA where appropriate (e.g., Section 2.3.2.5 discussed the cumulative impacts of Aircraft Overflights on wildlife, Section 2.3.4 discussed the cumulative impacts from land use and development activities, including oil and gas development and other land-use activities, on wildlife populations, and Section 4.1.1.1 for impacts to target species). Ski area development and road building are among the land development actions analyzed by federal land management agencies (e.g., the EIS documents referenced in Section 2.3.4). Those types of actions affect wildlife habitat, which is not affected by WS PDM (see Table 15 in the EA). Additional discussion and clarification concerning cumulative impacts analysis has been added to the Decision document.
1: 3	Cumulative impact should be conducted for site-specific areas, at least where historical need exists	Issue – Cumulative Impacts – Site specific impacts - Section 2.3.2 in the EA addressed the cumulative impacts of aerial hunting on wildlife. Chapter 4 discussed the relative cumulative impacts of PDM. Additional information and analysis of site-specific impacts, and cumulative impacts, and discussion and clarification of cumulative impacts analysis has been added to the Decision document.
1: 2	The EA seems to conclude that because only a few wildlife populations are impacted by PDM and that the impacts are minimal overall.	Issue - Target and Nontarget Species Impacts - The take of different wildlife species (target and nontarget) was adequately discussed in Sections 2.2.1 and 2.2.2 (description of species affected by PDM), and 4.1.1 and 4.1.2 (impacts to species taken in PDM). The EA found that impacts are minimal to any of the species populations.
1: 3	The EA did not address the positive or negative short- or long-term direct, indirect, or cumulative environmental effects of implementing or not implementing PDM	Issue - Direct, Indirect, and Cumulative Impacts - Analyses in Chapters 2 and 4 discuss a number of relevant direct, indirect, and cumulative effects. We have also provided information and analysis predicting what is reasonably foreseeable to occur in the absence of PDM by WS, which is increased PDM by non-Federal entities, with potentially more adverse environmental effects. Additional discussion and clarification of cumulative impacts has been added to the Decision document.
1: 4 4: 63-66	WS failed to analyze the fact that Colorado is now occupied wolf and lynx habitat and conduct site-specific analysis for these species. WS jeopardizes wolf and lynx recovery.	Issue - Nontarget Species Impacts - This issue was addressed in Sections 2.2.2.2 and 4.1.2.1. Standard operating procedures to avoid taking lynx were addressed in Section 3.4. Colorado is currently not considered "wolf-occupied" habitat. However, WS has conducted a Section 7 consultation with USFWS (USDA 1997, Appendix F) and obtained an incidental take authorization for wolves. WS conducted Section 7 consultation with USFWS in 2005 for lynx and obtained a Biological Opinion and incidental take statement for lynx to which WS will abide. WS has not accidentally taken or harmed any lynx or wolves in Colorado. Mitigation measures and SOPs in place are adequate to avoid significant impacts on these species.
1: 4	WS failed to adequately discuss its direct effects from its aerial gunning on wildlife populations.	Issue -Target and Nontarget Species Impacts from Aerial Hunting - Impacts of aerial hunting on target coyotes and red fox with aerial hunting were adequately analyzed in Section 4.1.1.1. Additional information and analysis on county level coyote take

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		and population impacts has been added to the Decision document.
1: 7 4: 30-33	WS risks pilots and gunners to accidents in aerial hunting.	Issue - Health and Safety - This issue was adequately analyzed in 4.3.1.3. See earlier response herein to this issue.
1: 9	WS kills tens of thousands of native mammalian carnivores each year.	Issue - Target Species Impacts - This issue was adequately analyzed in Section 4.1.1.1. Commenter is not referring to take by Colorado WS alone, but take at the national level which is outside the scope of this EA.
1: 11	The EA fails to adequately address cumulative impacts on lynx in the southern Rockies.	Issue - Cumulative Impacts on Lynx - The EA addresses lynx in Section 2.2.2.2 and has considerable discussion of cumulative impacts on lynx in Section 4.1.2.1. Standard operating procedures to avoid taking lynx were addressed in Section 3.4. WS conducted a Section 7 consultation with USFWS in 2005 and obtained a Biological Opinion and incidental take for lynx to which WS will abide. Mitigation measures and SOPs in place are adequate to avoid significant impacts on these species. WS PDM in the State is not likely to contribute to any significant cumulative adverse effects on lynx (Section 4.1.2.1).
1: 12	WS fails to adequately train their personnel to be selective and humane with PDM methods which results in human health and safety concerns.	Issue - Health and Safety - The EA addressed this issue adequately in Sections 2.2.3 and 4.1.3. Current standard operating procedures to minimize potential conflicts were addressed in Section 3.4. Additionally, USDA (1997-Appendix P) provides a risk assessment for methods used in wildlife damage management including those used in PDM that showed risks to the public are minimal.
4: 6	Continuously putting a strain on a sink population can affect the overall metapopulation because sink populations drain source populations.	Issue - Target and Nontarget Species Impacts - This is a misinterpretation of an ecological theory. A source-sink population is one where the source population produces more animals than the habitat can support and, hence, provides dispersing individuals to "sink" populations. Sink populations are those that would disappear without the continuous flow of individuals from the source population. The sink population is usually too small to be biologically or genetically viable. Source populations are not "drained" as a result of dispersal to a sink population because individuals would not disperse if territories and resources were available in the source habitat. A theorized source-sink population is the Canada lynx (Livaitis et al. 1991, Hickenbottom et al. 1999).
4: 63-64	Should not complete the EA until a Biological Opinion from USFWS is issued for lynx. EA did not discuss the lynx, a new issue in Colorado. Lynx could be impacted by PDM.	Issue - Nontarget Species Impacts - Lynx, and measures taken by WS to avoid the take of lynx were adequately discussed in the pre-decisional EA, primarily in Sections 2.2.1.2, 3.2.1.2, 3.4.2, 3.4.2.2, and 4.2.2.1. WS was in the process of completing a Section 7 Consultation for lynx at the time of the pre-decisional EA. A Biological Opinion was received from USFWS (2005) and information from that was included in the Final EA in Sections 2.2.2, 3.4, and 4.1.2.1. The EA adequately addresses potential impacts to lynx from PDM.
4: 18	WS failed to mitigate its adverse environmental impacts.	Issue - Adverse Environmental Impacts - Section 3.4 identifies standard operating procedures that are used to reduce the potential for impacts, and meet the Reasonable and Prudent Alternatives and Measures, and Terms and Conditions in Biological Opinions

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		issued by USFWS on T&E species that could potentially be affected by WS PDM. The EA analyzes environmental impacts in Chapter 4 (and Chapter 2).
4: 33	WS must analyze probability of risks from aerial hunting aircraft accidents including number of accidents, ground fuel contamination to land and water, fire in remote areas, and disruption to homeowners in the area.	Issue - Impacts on Human Health and Safety and Environment - Risks and impacts associated with aerial hunting and aerial hunting aircraft accidents were analyzed in Section 4.1.3.1. WS aerial hunting in Colorado occurs in remote rural areas and aerial hunting personnel avoid flying or shooting near people or residences or other structures.
4: 33	Aerial hunting has impacts to the aesthetic outdoor experience.	Issue - Impacts to recreation on public lands – This issue was adequately addressed in Sections 2.3.4 and 4.1.4.1.
4: 33	WS must analyze impacts to wildlife living in each site-specific area.	Issue - Impacts to Nontarget Wildlife - The EA provided a detailed analysis of the potential for aircraft overflights to impact wildlife in Section 2.3.2 and discussed site-specific wildlife impacts in Section 2.3.4 of the EA. Additional information, discussion, and analysis of site-specific impacts on wildlife has been added to the Decision document.
4:56-59	WS must consider all cumulative impacts on black bear populations.	Issue - Impact on Target Species (black bears) - The EA adequately discussed the black bear in Colorado in Section 2.2.1.4 and analyzed WS PDM impacts and cumulative take in Section 4.1.1.1.
4: 59-61	WS must consider all impacts to bobcat considering there is no population data for them and bobcats can be overexploited.	Issue - Impact on Target Species (bobcat) - The EA adequately discussed the bobcat population in Colorado in Section 2.2.1.8 and analyzed WS PDM impacts and cumulative take in Section 4.1.1.1.
4: 68-69	WS must consider primary and secondary toxicity hazards of poisons used in PDM to black-footed ferrets.	Issue - Impact on Nontarget Species - Black-footed ferrets were discussed in Section 2.2.2.2 and potential impacts to ferrets from PDM in Section 4.1.2.1. Section 3.4 discusses SOPs designed to reduce potential impacts. As a result of restrictions on the use of M-44s in prairie dog towns, WS M-44 use will not impact black-footed ferrets. No other chemical toxicant is used in PDM.
4: 69-71	Lethal PDM impacts swift fox.	Issue - Impact on Nontarget Species - Swift fox were discussed in Section 2.2.1.2 and take as a nontarget in Section 2.2.2.1. The impacts to swift fox from PDM were adequately analyzed in Section 4.1.1.1 of the EA.
4: 72	Kit fox need protection from trapping and M-44s.	Issue - Impact on Nontarget Species - Kit fox were discussed in Section 2.2.1.2. The potential impacts to kit fox from PDM were adequately analyzed in Section 4.1.1.1 of the EA. Section 3.4 gives SOPs designed to minimize impacts to kit fox. WS did not take any from FY00 to FY04.

Comments Associated the EA's Compliance with NEPA Implementing Regulations

1: 1 4: 1, 2, 89	WS failed to conduct scoping.	Procedural Issue - NEPA Implementation - EIS vs. EA Regulations. Scoping is not required for preparation of an EA and FONSI. Nevertheless, we have engaged in considerable scoping in the preparation of the Colorado PDM EA that includes the interagency and public involvement processes we engaged in on prior EAs as well as the two public comment opportunities provided in the current EA process.
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1: 1 4: 2	An EIS would be more appropriate rather than an EA.	Procedural Issue - NEPA Implementation - EIS vs. EA Regulations. An EA is written to determine if an agency action will have significant impacts on the human environment. If the EA's Decision concludes that the selected alternative to address the need for action would have significant impacts to the human environment then an EIS would be written as required under NEPA. If the conclusion is a finding of no significant impact to the quality of the human environment, then an EIS would not be written.
1: 2	Agencies shall not commit resources prejudicing the alternatives before making a final decision.	Procedural Issue - NEPA Implementation - Current Programs - WS has not committed resources that would prejudice the decision made for the EA. The WS PDM program in Colorado has previously been covered under prior EAs (WS 1997, 1999, 2000) and is an ongoing program as defined by CEQ. WS could stop PDM activities immediately if a Decision were reached that WS would no longer provide PDM in Colorado. No commitment of resources has been made that would prevent WS from making that decision if the decision-maker so chooses.
1: 2, 7 4: 17	The EA relied on dated science that was biased towards "old ways" of doing things (anachronistic view). For example the EA based future loss on 20 year-old studies.	Procedural Issue - NEPA implementation - WS relies on the best available science to complete analyses. Sometimes studies may be greater than 10 years old, but the findings are still relevant and current, and new studies may not be available. The studies the commenter referred to are the few studies available that address the concept of future loss and the cost-effectiveness of PDM. A review of recent history provides a very logical explanation for the relatively heavier reliance on pre-1984 science in this and many other EAs on predator damage management. Following the release of the Cain Report (Cain et al. 1972) and President Nixon's Executive Order 11643 in 1972, there was a great proliferation of research on issues related to predator control and the livestock industry. USDI (1978) presents information on the increase in funding for this type of research that occurred during that time. This period of increased emphasis on funding and research lasted from about 1973-1979. There has not been any period of time since then when the emphasis has been as great as it was during those years (Guy Connolly, Wildlife Research Biologist, USDA, APHIS, WS, retired, pers. comm. to M. Collinge, WS 1996). To ignore much of the landmark research that occurred during this period would not be a good use of science.
1: 3	A NEPA analysis must include "all" federal actions and not exclude actions deemed small (i.e. small acreage affected).	Procedural Issue - NEPA Implementation - The EA was a compilation of all PDM activities in Colorado. We did not exclude actions deemed small. In fact, we discussed PDM for all predators in Colorado, some of which are species for which WS may or may not even receive any requests for assistance in a given year. However, to inform the public of potential effects from the minor actions that may be requested to manage damage by those species, we included all activities associated with PDM in the EA.
1: 8 4: 23	According to CEQ "agencies shall insure the professional integrity. . .	Procedural Issue - NEPA Implementation - Professional Integrity - We believe that the EA gives adequate views of the issues

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	"The EA has a clear anti-predator bias and biased discussions.	related to PDM and the alternatives that could potentially be implemented to carry out PDM. In completing the document, we believe that the EA was held to a professional standard. The EA is not "biased" against predators, but focuses on managing predator-caused damage
1: 9, 12	WS fails to adequately analyze cumulative impacts according to CEQ regulations.	Procedural Issue - NEPA Implementation - Cumulative Actions were defined in Section 2.1.4 of the EA. Known cumulative impacts were used to analyze predator population impacts in Section 4.1.1.1. However, this issue will be addressed further in the Decision.
1: 14	WS' characterization of the "environmental baseline" (Section 2.1.2) shows its tendency to skimp and betray NEPA's hard look requirement.	Procedural Issue - NEPA Implementation - Establishing the Environmental Baseline - the EA establishes the environmental baseline in Section 2.1.2 of the EA. Additional discussion and clarification of this issue has been added to the Decision document.
4: 6	WS is not categorically excluded from completing EAs in accordance with NEPA regulations WS is not <i>categorically excluded</i> from the requirement to prepare an environmental assessment because its cumulative impacts are great	Procedural Issue - NEPA Implementation - The commenter cited 7 CFR 372.5(c) which define criteria for WS's categorically excluded actions. Individual WS PDM actions clearly do meet the criteria for categorical exclusions shown in the cited regulations. The EA supports that impacts are minor, which further supports categorical exclusion of WS PDM activities in the analysis area. Cumulative effects of WS actions are not great, which is supported by the analysis in the EA and further analysis and discussion in the Decision document.
4: 1	WS failed to extend the public comment period by 30 days upon request.	Procedural Issue - NEPA Implementation - A 39 day comment period was allowed for the public to respond to the pre-decisional EA, which is more than required. The commenter provided a 90 page comment letter to the pre-decisional EA suggesting that they had ample opportunity to comment. In addition, a second comment period lasting 30 days was provided after the pre-decisional EA was revised into a Final EA.
4: 1	WS must look at cumulative and connected actions according to NEPA. Grazing is a connected action. Oil and gas development, logging, and other activities must be analyzed in cumulative impacts to wildlife populations.	Procedural Issue - NEPA Implementation - Connected and cumulative actions were described in the Final EA in Sections 2.1.3 and 2.1.4. Grazing is not a connected action to WS PDM (see Section 2.3.8). Cumulative impacts were discussed throughout the EA (e.g., Section 2.3.2.5 discussed the cumulative impacts of Aircraft Overflights on wildlife, Section 2.3.4 discussed the cumulative impacts from oil and gas development and other land-use activities on wildlife populations, and Section 4.1.1.1 for impacts to target species). Additional discussion and clarification of this issue has been added to the Decision document.
4: 4, 17	WS must analyze all reasonably foreseeable actions according to NEPA regulations.	Procedural Issue - NEPA Implementation - Foreseeable actions as defined by NEPA are described in Section 2.1.4. Section 4.1.1.1 describes impacts to target species and what the impacts are projected to be in the reasonably foreseeable future. The EA describes and considers all reasonably foreseeable actions that are related to WS PDM or the effects of PDM.
4: 12	WS claims that it is the lead agency for this EA.	Procedural Issue - NEPA Implementation - NEPA implementing regulations clearly define the lead agency as the agency that will

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		take the action. In this case, WS is the agency that is taking the action, and thus the lead agency for the action.
4: 18	NEPA regulations require that an EIS include mitigation measures.	Procedural Issue - NEPA Implementation - We agree that mitigation measures are required for adverse impacts identified in an EIS, but are not required to be identified in an EA. We have identified standard operating procedures that are built-in measures to minimize or avoid environmental harm which are similar to or equivalent to mitigation measures.
8: 3	The EA does not mention any specific review period.	Procedural Issue - NEPA Implementation - Monitoring - Section 1.6.4 in the EA states that the EA will be reviewed annually.
Comments Outside the Scope of the EA		
1: 4 4: 2, 3	Referring to prairie dog damage management, WS did not analyze its impacts on species associated with prairie ecosystems.	The EA was focused on one aspect of the Colorado WS Program - predator damage management which was discussed in Section 1.1 of the EA. Prairie dog damage management is outside the scope of actions considered and reviewed in the EA.
1: 4 4: 2, 3	Referring to bird damage management, WS did not discuss how it is in compliance with the Migratory Bird Treaty Act.	The EA was focused on one aspect of the Colorado WS Program - predator damage management which was discussed in Section 1.1 of the EA. Bird damage management is outside the scope of actions considered and reviewed in the EA.
3: 1	WS PDM is a federal taxpayer subsidy to ranchers. Thus this provides an unfair trade advantage to American livestock producers.	Issue - Government Subsidies - Government subsidies are public policy decisions made by Congress and are outside the scope of decisions that WS has authority to make.
3: 2	T&E species such as lynx and ferrets should have priority over domestic animals such as cattle on public lands.	Issue - Management of Public Lands - WS is a nonregulatory agency and has no authority to restrict livestock grazing. Public land grazing management falls under the authority of the BLM and FS.
4: 4	FOIA requests go unanswered	Issue - FOIA Requests - FOIA and regulations regarding requests are outside the scope of the analysis in this EA. WS handles FOIA requests through the APHIS FOIA office.
4: 37	WS uses methods such as sodium fluoroacetate (1080) which has great impacts.	Issue - Wildlife Damage Management Methods Impacts - Compound 1080 (presently only EPA registered for use in the Livestock Protection Collar) is not registered for use in Colorado and, therefore, is outside of the scope of methods considered and analyzed for use by WS in the EA.
4: 42-43	Impacts of strychnine, aluminum phosphide, and zinc phosphide were not discussed.	Issue - Field Rodent Damage Management Methods Impacts - These are rodent damage management chemical methods that are not used by WS in PDM and are therefore outside the scope of methods considered and analyzed for use by WS in the EA.
4: 62	WS may inadvertently take river otters while trapping beavers - an activity that violates the state constitution and implementing regulations.	Issue - Nontarget Species Impacts of Beaver Damage Management - Beaver damage management is outside the scope of actions considered and analyzed in the EA.
4: 68-77	WS control of prairie dogs impacts several nontarget species and was omitted from the EA. Prairie dog	Issue - Nontarget Species Impacts - Prairie dog damage management is outside the scope of actions considered and reviewed in the EA.

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	ecosystem needs protection	
5: 3	WS should contemplate assisting wool growers that hire herders that make them live in squalid conditions with inadequate food and storage facilities, contaminated drinking and bathing water, no access to medical facility or community services and where they are physically abused and starved.	Issue - Environmental Justice - WS ensures that its actions do not violate the Environmental Justice Executive Order (see Section 1.7.2). The use of herders by sheep producers is a non-lethal method for controlling or reducing predator damage. It is not a method practical for WS to implement, and thus we only recommend and encourage producers to use herders where practical in their operations. However, WS has no authority to enforce worker treatment laws or regulations.

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APPENDIX B

Following are two tables with the BLM and USFS allotments in Colorado where WS conducted PDM from FY02 to FY04 and the allotments where WS will likely be requested to conduct PDM from FY05 to FY12. Based on past experience, WS expects to conduct PDM on about 50% of identified active allotments (i.e., allotments where PDM was conducted from FY02 to FY04 to protect livestock) in a given year. Additionally, WS is likely to conduct PDM annually on about 5% of inactive BLM allotments and 10% of inactive USFS allotments (i.e., allotments where PDM has been conducted in the past, but not from FY02 to FY04). BLM has 1,994 and USFS has 1,055 additional leased grazing allotments in Colorado where WS could be requested to conduct PDM, but where WS has not conducted PDM over the past 15 years. WS typically starts conducting PDM on only a few (about 1% or less) of these additional allotments annually. WS typically conducts PDM on an average of 60 BLM and 55 USFS grazing allotments annually.

BLM Allotments in Colorado Where WS Conducted PDM Activities from FY02-FY04 and Where WS PDM Activities Potentially Could Occur from FY 05 to FY12									
Resource Management Area	Status of Allot. Leased or Vacant	Allotment Name	Allot #	Acres	WS PDM Conducted on Allotment			WS PDM Probable from FY05 to FY12	
					FY02	FY03	FY04	Active Allotments	Inactive Allotments
Glen wood	Leased	Ike Creek-Burnt/Spruce Ridge	08506	17,625					X
		Cottonwood Creek	08508	2,126					X
		East Castle	08601	9,480	X	X		X	
		Piney Creek	08701	250					X
		Wolcott	08702	3,292			X	X	
		State Bridge	08706	5,903	X	X	X	X	
		Ute Creek	08707	5,583					X
		Bocco Mtn	08730	3,967	X		X	X	
		Cabin Gulch	08731	3,240					X
		Diamond J	08732	1,560					X
		Domantle	08733	562					X
		Bellvache	08734	503					X
		Hells Hole	08735	527					X
		Glen wood RMA Subtotal	13	54,619	3	2	3	4	9
Grand Junction	Leased	Badger Wash	06601	7,993		X		X	
		Garr Mesa	16503	10,399					X
		Little Salt	16507	33,718		X		X	
		East Salt	16602	102,060		X		X	
		West Salt Common	16603	104,727					X
		Prairie Canyon	16616	27,094					X
		Grand Junction RMA Subtotal	5	277,998	0	2	0	2	3
Gunnison	Leased	Blue Canyon	06050	4,843					X
		Big Blue	06051	2,988					X
		Big Park	06052	3,084					X
		Cox Park	06053	1,282					X
		Ten Mile Springs Common	06100	19,212					X
		Sapinero Mesa	06101	12,169	X			X	
		West Powderhorn	06102	4,302					X
		Huntsman Mesa	06106	3,993					X
		Devils Lake	06115	9,143					X
		Ramboulet Park	06501	1,285					X
		Red Cloud	06502	12,373					X
		Hensen Creek	06504	12,793					X
		Grizzly Gulch	06505	15,189					X
		American Flats	06507	1,995					X
		Mill Gulch	06508	2,720					X
		American Lake	06509	6,593					X
		Goose Creek	16001	3,133	X			X	
		Cimarron	16008	1,231					X
		North Cimarron	16016	5,780					X

		Little Blue Creek	16032	2,855					X
		Blue Cimarron	16036	1,432					X
		Cold Springs	16362	2,377					X
		Gunnison RMA Total	22	130,771	2	0	0	2	20
La Jara	Leased	McMahon/Greenie	04201	15,963					X
		Grande/Mogote	04226	7,774					X
		Los Mogotes	04229	5,842					X
		Llano	04236	5,950					X
		Pinon	04245	10,461					X
		Braiden North	04247	1,008					X
		Kiowa Hill	04248	4,022					X
		Eight Mile	04250	7,084					X
		Mesa Common	04251	4,905					X
		San Luis Hills	04252	2,529					X
		Flat Top	04253	8,159					X
		Braiden South	04257	325					X
		Pinion	14120	4,458					X
		Poso Creek	14206	349					X
		Mogote Flat	14225	3,297					X
		Sanderson	14305	697					X
		County Line	14309	191					X
		Indian Head	14310	414					X
		Limekiln	14401	5,084					X
		Pup Peak	14402	5,086					X
		Nicomodes	14403	2,621					X
		Refuge	14404	1,943					X
		Rock Creek	14406	15,363	X			X	
		Triangle	14410	4,031					X
		Little Mogotes	24222	14,413					X
		La Jara Total	25	131,970	1	0	0	1	24
Little Snake	Leased	Gold Blossom	04005	5,098					X
		West Willow Creek	04012	2,233					X
		West Squaw Mtn	04018	2,036					X
		North Yahoo Mtn	04019	3,554					X
		Yahoo Mtn	04020	2,300					X
		Bible Back Mtn	04029	4,627					X
		Upper Putt Creek	04036	8,459					X
		Serviceberry Mtn	04039	3,025					X
		Lucas Hill	04049	25,692					X
		Hat Hill	04050	1,282					X
		North Mud Spring	04051	7,937		X		X	
		South Mud Spring	04052	7,234					X
		Middle Bord Gulch	04053	2,069					X
		Sugarloaf Basin 15	04054	2,141					X
		Lower Bord Gulch Section	04057	15,546					X
		County Road #7	04060	4,784					X
		Yampa River	04061	1,853					X
		Rimrock Yampa	04063	5,392					X
		Upper Cottonwood	04076	17,709					X
		Lower Little Bear	04088	817					X
		Black Mtn	04091	10,101					X
		Lower Elkhead Creek	04092	970					X
		North Fork Elkhead Creek	04093	17,236					X
		Elkhead Creek	04094	2,201					X
		Upper Calf Creek	04095	419					X
		Bull Gulch	04097	658					X
		Morgan Creek	04098	25,710					X
		Little Butcher Knife	04100	680					X
		Day Creek	04112	4,176					X
		Buck Mtn	04115	4,408					X
		Upper Horse Gulch	04133	1,593	X	X		X	

	Deal Gulch	04134	4.209					X
	West Well Sweep	04137	2.262					X
	Berry Gulch	04144	5.512					X
	Peck Gulch	04145	8.495					X
	Gill Reservoir	04150	3.803			X	X	
	East Dry Creek	04157	1.153					X
	Grassy Creek	04163	30.761					X
	Upper Fish Creek	04165	2.445					X
	Trout Creek	04170	5.569	X			X	
	Lower Deer Creek	04199	745					X
	East Powder Wash	04202	26.779	X	X	X	X	
	Horse Draw	04204	15.275					X
	Snake River	04206	62.497	X	X	X	X	
	Sand Creek	04207	11.441		X		X	
	Suttles Basin	04209	8.226					X
	Upper Horse Gulch	04210	11.116	X	X		X	
	Lang Spring	04212	3.688					X
	Nipple Rim	04213	40.073	X			X	
	Powder Wash	04214	32.541	X	X	X	X	
	State Line	04215	6.599	X	X		X	
	Shepherd Spring	04217	75.742	X	X	X	X	
	Sand Wash	04219	76.192	X	X	X	X	
	Grounds	04222	7.997			X	X	
	Red Wash	04224	21.966	X	X	X	X	
	Nipple Peak	04225	15.566	X		X	X	
	Hiawatha Tridistrict	04300	22.683	X		X	X	
	Shell Creek	04301	7.984	X			X	
	Dry Creek	04302	85.140	X	X	X	X	
	South Bears Ears	04303	25.644					X
	West Boone Draw	04304	37.269					X
	East Boone Draw	04305	12.199					X
	East Douglas Mtn	04306	22.101					X
	Cross Mtn	04307	21.841		X	X	X	
	Sawmill Canyon	04308	21.999	X	X	X	X	
	Teepee Draw	04309	8.803					X
	Smelter Hill	04310	11.099					X
	Thompson Basin	04311	16.887					X
	Upper Rye Grass	04313	7.052					X
	Browns Park	04320	55.480	X	X		X	
	Cold Springs	04325	69.070					X
	Canyon/Horseshoe	04326	12.531	X	X	X	X	
	Diamond Breaks	04327	37.026		X		X	
	Spitzie Draw	04335	21.529	X			X	
	Vermillion Flats	04338	1.914					X
	South Green River	04340	4.452					X
	Disappointment	04400	32.327	X	X	X	X	
	West Wapiti Peak	04401	11.209	X	X		X	
	Cedar Springs Draw	04402	33.627	X	X	X	X	
	Sagebrush Creek	04403	23.405	X			X	
	Crooked Wash	04404	18.861	X	X		X	
	Lay Peak	04406	1.833	X	X	X	X	
	North Deception Creek	04408	12.689		X		X	
	Juniper Mtn	04412	13.418					X
	Lay Creek	04413	2.928	X	X		X	
	Big Bend	04414	1.635					X
	Lower Maudlin Gulch	04416	15.237	X	X		X	
	Upper Boxelder Gulch	04424	5.433					X
	Lower Boxelder Gulch	04431	13.650		X	X	X	
	Duffv Mtn	04432	9.837	X		X	X	
	Little Juniper	04434	3.184					X
	East Spring Creek	04435	11.851					X

		Mud Spring Gulch	04437	2,591					X
		West Spring Creek	04438	14,704	X			X	
		Lav Creek EU	04440	2,246					X
		Upper Four Mile	04500	4,768			X	X	
		North Blue Gravel	04503	5,103					X
		Lower Fortification	04506	1,646					X
		Four Mile	04511	2,566					X
		West Four Mile	04513	4,275					X
		Pole Gulch	04514	21,406					X
		Cedar	04515	7,586					X
		Headquarters	04516	5,894					X
		Dry Gulch	04517	4,118					X
		Scandinavia	04518	9,401					X
		Seven Mile	04519	6,391	X			X	
		Greasewood	04521	46,301	X	X	X	X	
		Thornburgh Gulch	04522	5,517					X
		Big Hole Gulch	04524	9,737	X			X	
		Alkali Springs	04530	23,442					X
		Big Gulch	04542	1,494	X	X		X	
		Great Divide	04546	17,077					X
		West Fortification Dike	04552	3,293					X
		North Pole Gulch	04553	2,220					X
		Iles Mtn	04603	10,577			X	X	
		East Axial Basin	04606	6,377			X	X	
		Elkhorn Creek	04615	8,258					X
		Thornburgh Monument	04617	4,251					X
		Little Snake RMA Subtotal	118	1,617,652	33	28	23	44	74
Saguache	Leased	West Tracy Ridge	04563	963					X
		Tracy Canyon	04565	1,493					X
		Tracy Common	04566	29,612					X
		Biedell	04567	2,361					X
		Rio Grande Canal	04574	5,174					X
		Nye	24518	1,839					X
		Cotton Creek	24530	6,968					X
		Stonehouse	24531	4,027					X
		McIntyre Gulch	24534	4,579					X
		Saguache RMA Total	9	57,016	0	0	0	0	9
San Juan	Leased	Burro Point Community	08000	21,213					X
		Cross Canyon	08007	40,541					X
		Lower McElmo	08011	10,208					X
		Cahone Mesa	08012	23,704					X
		Yellow Jacket	08018	8,442					X
		Cannon Ball	08019	2,099					X
		Sand Canyon East	08023	2,342					X
		Hamilton Mesa	08035	7,792					X
		Stinking Spring Canyon	08052	2,311					X
		Mesa Verde	08053	6,400					X
		Point Lookout	08054	2,900					X
		Goodman Gulch	08055	1,035					X
		Flodine Park	08066	6,257					X
		Gladstone	08901	12,126					X
		Eureka	08902	9,317					X
		Picayne/Mineral Point	08903	5,534					X
		West Needles/L. Molas	08906	13,418					X
		Cottonwood (USFS)	08908	2,992					X
		Minnie Gulch	08909	3,057					X
		Maggie Gulch AMP	08911	6,639					X
		Gypsum Gap	17002	3,821					X
		Bull Canyon	17053	35,209					X
		Nelson	17055	4,737					X
		Spring Creek	17056	23,057					X

		Beards Corner	17059	2,100					X
		Lavender Point	17064	6,027					X
		Spencer Lake	17104	667					X
		San Juan RMA Subtotal	27	263,946	0	0	0	0	27
Uncompahgre	Leased	Smith Mtn	05001	5,457					X
		Selig Canal	05003	2,440					X
		Peach Valley Div	05004	2,839					X
		Upper Peach Valley	05007	4,102	X	X	X	X	
		Brush Point	05008	18,829	X	X		X	
		Green Mtn	05017	21,654					X
		Black Ridge	05020	11,026					X
		Sulphur Gulch	05023	1,755					X
		Shamrock	05024	2,132					X
		Rawhide/Coffeenot	05034	2,398	X			X	
		Big Gulch-40	05036	295	X	X	X	X	
		Rim Rock	05051	1,049					X
		Sandy Wash	05502	7,458	X		X	X	
		Cushman	05506	6,731					X
		Pipeline	05507	10,212					X
		Shavano Mesa	05511	1,978					X
		Franklin Mesa	05512	3,528					X
		Dry Creek Basin	05513	6,221					X
		East Fork Dry Creek	05514	787					X
		Dave Wood Road	05518	2,712					X
		Simms Mesa	05519	9,489					X
		Lower Horsefly	05520	6,385					X
		Highway 90	05521	6,220	X			X	
		Beaver Hill	05522	8,572					X
		Shinn Park	05534	5,343					X
		Dry Cedar	05537	4,804					X
		Waterdog Peak	05571	1,695					X
		Tappan Creek	05575	705					X
		Sawpit Ind	07217	62					X
		Middle Hamilton Lse	07233	1,684					X
		Lower Hamilton	07234	1,032					X
		Bramier Draw	07235	3,858					X
		Lower Escalante	14002	2,549	X	X		X	
		Canal	14012	7,936				X	
		Wells Gulch	14016	17,046		X		X	
		Alkali Flats	14017	35,775	X			X	
		Deer Basin/Midway	14019	12,403	X	X	X	X	
		Antelope	14020	2,764					X
		Hubbard Creek	14516	1,934					X
		Pilot Creek	14518	1,647					X
		Muddy Creek	14519	1,467	X			X	
		South of Town	14534	8,116			X	X	
		Lee Lands	17003	2,110					X
		Broad Canyon	17199	3,495					X
		Uncompahgre RMA Total	44	260,696	10	6	5	13	31
White River	Leased	Puckett Gulch	06001	3,597					X
		Pine Knott Gulch	06002	2,298					X
		Wood Road Gulch	06003	1,548					X
		North Dry Fork	06005	21,477					X
		Segar Gulch	06008	19,670					X
		Hyberger	06009	1,886					X
		Little Rancho	06010	2,047					X
		Thirteen Mile	06011	7,998					X
		Davis Creek	06016	6,416					X
		Cow Creek	06019	12,848					X
		Piceance Mtn	06023	154,200					X
		Black Sulphur	06029	20,103					X

	Yellow Creek	06030	83,392					X
	Duck Creek	06031	25,323					X
	Spring Creek	06032	40,297					X
	East Fork Spring Creek	06033	4,267					X
	Greasewood	06036	29,942					X
	Little Spring Creek	06038	16,181					X
	Hammond Draw	06039	6,907					X
	Upper Fletcher Draw	06040	7,523					X
	Lower Fletcher Draw	06041	9,882					X
	Boise Creek	06042	8,356	X	X	X	X	
	Cricket (VFO)	06300	2,765		X		X	
	Cottonwood Draw	06301	1,344					X
	Roundtop	06302	9,588		X		X	
	Mud Springs Draw	06303	2,576		X		X	
	Basin Springs	06304	12,641		X		X	
	Marthas Hole	06305	4,857		X		X	
	Turner Creek	06306	4,354		X		X	
	K Ranch	06307	62,586		X		X	
	Artesia	06308	49,409	X	X	X	X	
	State Line (VFO)	06311	8,097	X	X	X	X	
	Raven Ridge	06312	9,567					X
	Coal Oil Basin	06313	8,134					X
	Raven Park	06314	19,986	X	X	X	X	
	Spooky Mtn	06316	29,688	X	X		X	
	Red Wash	06320	8,239	X	X		X	
	Wolf Creek	06323	80,023		X		X	
	Skull Creek	06322	14,290	X			X	
	Massadona	06324	10,890	X	X		X	
	Elk Springs	06326	26,761	X			X	
	Winter Valley Gulch	06329	1,887	X	X		X	
	Upper Coal Creek	06330	7,713	X	X	X	X	
	Horse Draw	06332	17,982	X	X	X	X	
	Pinyon Ridge	06333	14,348					X
	Coal Reef	06334	4,008			X	X	
	Hall Draw	06335	7,181		X		X	
	Hatch Flat	06336	1,495					X
	Johnson/Trujillo	06338	19,412		X	X	X	
	Shavetail Gulch	06340	8,139					X
	Douglas Creek	06342	5,414					X
	Banta Flats	06343	16,063	X	X	X	X	
	Red Rocks	06371	2,459		X		X	
	Stuntz Ridge	06372	2,065					X
	Miller Creek	06373	4,000					X
	McAndrews Gulch	06600	17,096					X
	Little Toms Draw	06603	14,355	X	X	X	X	
	West Shutta	06604	2,512					X
	Keystone	06605	43,892					X
	Blacks Gulch	06612	29,909					X
	Upper Smith Gulch	06613	11,747					X
	Jordan Gulch	06620	7,576					X
	Lower Smith Gulch	06621	8,785					X
	Windy Gulch	06622	2,514					X
	Anderson Ind	06623	4,307					X
	Kourlis H	06800	5,238					X
	Thornburgh	06802	4,786					X
	Theos T	06812	5,608					X
	Theos North	06813	5,464					X
	Jensen W	06830	971					X
	Big Mtn	06837	949					X
	White River RMA Total	71	1,129,831	14	23	10	26	45
BLM Total Allot		334	3,924,499	63	61	41	92	242

Colorado USFS National Forest and Grassland Allotments Where WS Conducted PDM Activities from FY02-FY04 and Where WS PDM Activities Potentially Could Occur from FY 05 to FY12									
Ranger District	Status of Allotment - Leased or Vacant	Allotment Name	Allot #	Acres	WS PDM Conducted on Allotment			WS PDM Probable from FY05 to FY12	
					FY02	FY03	FY04	Active Allotments	Inactive Allotments
Grand Mesa, Uncompahgre, and Gunnison National Forest Allotments									
Ouray	Leased	Bear Creek	00651	3,083					X
		Crystal Peak/Lower Elk	00654	18,558					X
		Red Canyon/Dry Creek	00661	6,670		X		X	
		Uncompahgre Pk/N. Henson	00662	17,440					X
		Ouray RD Subtotal	4	45,751	0	1	0	1	3
Gunnison	Leased	Cold Springs	00711	19,157					X
		Spring Creek	00930	56,808					X
		Red Mountain	00937	8,636					X
		Gunnison RD Subtotal	3	84,601	0	0	0	0	3
Paonia	Leased	Dry Fork	00803	23,106					X
		Dyer	00804	16,027					X
		Henderson	00806	8,000					X
		Mule Park	00812	3,479			X	X	
		Spencer Basin	00819	1,178					X
		West Muddy	00822	20,575					X
		Electric Mountain	00863	8,481			X	X	
		Muddy S&G	00864	0	X			X	
		Hotchkiss	00868	15,134	X			X	
		Huntsman	00871	20,486	X			X	
		Chair Creek	00874	7,500					X
		Condemn IT Park	00876	7,456			X	X	
		West Turner	00885	2,626					X
		Paonia RD Subtotal	13	134,048	3	0	3	6	7
Grand Mesa - Uncompahgre- Gunnison NF Total			20	264,400	3	1	3	7	13
Pike and San Isabel National Forests and Comanche National Grasslands Allotments									
San Carlos	Leased	Slide Mountain	03120	2,650					X
		San Carlos Subtotal	1	2,650	0	0	0	0	1
Comanche	Leased	1AE Mt Carmel	06426	9,288					X
		1AE Mt Carmel	06426	9,288					X
		1AW Sunflower	06427	4,450					X
		1B Aubrey Trail	06428	6,760					X
		1E Pioneer	06432	932					X
		1K Highway	06437	1,384					X
		1P Solitare	06439	318					X
		6H Blue Mound	06448	645					X
		6L Hawk's Nest	06451	1,118					X
		6O Sunset	06454	318					X
		7B AT&SF	06460	1,520					X
		14I Sand Arroyo	06474	639					X
		14M Shortgrass	06476	543					X
		16G Playa	06484	2,181					X
		16Q Bobwhite	06485	477					X
		3D Holt Park	06532	2,577		X	X	X	
		8H Antelope	06565	292					X
		2G Thistle	06582	30					X
		Valley View	06702	15,313	X		X	X	
		Cemetery	06715	3,897	X	X	X	X	
		Timpas	06716	7,761	X	X	X	X	
		West Fork Dry Creek	06719	2,216					X
				Comanche RD Subtotal	22	71,947	3	3	4
Pike/San Isabel/Comanche NF/NG Total			23	74,597	3	3	4	4	19

Rio Grande National Forest Allotments									
Conejos Peak	Leased	Campo Bonito	09143	5,118	X			X	
		Cornwall/Willow	09146	7,347					X
		Cropsy Summit	09149	7,436					X
		East Vega/Treasure	09152	6,697					X
		Elwood	09155	5,216					X
		Marble Mountain	09157	1,143					X
		North Fork-Middle Fork	09161	8,676					X
		Upper Adams-West Vega	09176	6,929					X
		Bancos Alazon	09308	12,241					X
		Glacier	09311	6,232					X
		Jarosa Mesa	09313	2,230					X
		Mesa	09315	2,458					X
		Saddle Creek	09318	6,015					X
		Twin Lakes	09319	8,682					X
		Wolf Creek	09321	5,098					X
		Green Lake	09324	3,731					X
		Jacobs Pasture	09991	0					X
		Conejos Peak RD Subtotal		17	95,249	1	0	0	1
Divide	Leased	Martinez/Underwood	09158	8,228					X
		Middle Pole	09458	3,200					X
		Snow Mesa	09465	4,736					X
		Stoney	09466	6,950					X
		West Pole	09470	3,840					X
		Boot Mtn	09503	5,439					X
		Indianhead	09513	10,194					X
		Mesa	09516	6,955					X
		Pinon	09518	11,001	X			X	
		Divide RD Subtotal		9	60,543	1	0	0	1
Rio Grande National Forest Leased Total			26	155,792	2	0	0	2	24
Routt National Forest Allotments									
Yampa	Leased	Baldy Mountain	01518	6,950	X	X	X	X	
		Bunker Basin	01521	6,893	X	X	X	X	
		Coal Creek	01523	5,467	X		X	X	
		Dunkley	01524	4,742					X
		Dunkley Flattops	01525	3,954		X	X	X	
		East Fork	01526	2,637	X	X	X	X	
		Knife Edge	01527	4,932	X	X	X	X	
		Mt. Orno	01528	4,033			X	X	
		Poose Creek	01530	4,726	X	X	X	X	
		Rough Creek	01532	7,025	X	X	X	X	
		Trout Creek	01534	7,385					X
		Ute	01535	4,154	X		X	X	
		Wheeler Basin	01536	6,831					X
		Willow Creek	01537	4,104	X	X		X	
		Pine Creek	01544	3,860					X
		Wet Park	01547	4,722					X
		Pagoda/Slide	01548	10,007					X
		Indian Run	01549	3,821	X			X	
		Beaver Creek	01550	5,692	X			X	
		Beaver Flattops	01551	1,560	X			X	
		Yampa RD Subtotal		20	103,495	12	8	10	14
Hahns Peak - Bears Ears	Leased	Diamond	03101	4,396					X
		Adams	03102	2,067	X		X	X	
		Meaden Peak	03103	3,904			X	X	
		Saddle Mountain	03104	4,631			X	X	
		California Park	03105	3,735			X	X	
		East Quaker	03106	4,629					X
		Armstrong Creek	03107	3,507					X
		Sand Mountain	03108	4,103					X

		Stukey Creek	03109	3,398					X
		Stewardship	03110	12,802	X			X	
		Lost Park	03111	7,640	X	X	X	X	
		Sawtooth	03112	4,720		X	X	X	
		Boulder Creek	03114	1,404					X
		Black Mountain	03115	7,518	X	X	X	X	
		Fortification	03116	2,986	X	X	X	X	
		Quaker Knob	03117	494					X
		Little Bear	03118	10,474		X	X	X	
		Bears Ears	03119	2,695	X	X	X	X	
		Mill Creek	03120	2,809					X
		North Fork Elkhead	03121	3,114	X	X	X	X	
		Slide Mountain	03122	3,404	X	X	X	X	
		Baldy Peak	03123	3,181	X		X	X	
		Hole in the Wall	03124	3,466	X	X	X	X	
		Potholes	03125	1,971	X		X	X	
		West Quaker	03126	3,985	X	X	X	X	
		Rabbit Ears	03301	10,802					X
		Harrison Creek	03305	16,621					X
		Corral Creek	03308	5,886					X
		Coulton Creek	03315	13,422					X
		Big Agnes	03316	23,796					X
		Big Red Park	03317	20,126			X	X	
		Farwell Mountain	03318	0					X
		Grouse Mountain	03319	7,898					X
		Little Red Park	03320	4,101	X	X	X	X	
		Whiskey Creek	03321	19,309					X
		Middle Fork Circle Bar	03324	8,714	X	X	X	X	
		Summit Creek	03325	5,835	X	X	X	X	
		Dudley	03326	14,415	X	X	X	X	
		Hahns Peak	03328	7,101					X
		Devils Slide	03329	14,693					X
		Johnson Creek	03330	4,415	X	X	X	X	
		Slater Creek	03331	6,463	X		X	X	
		Fireline	03334	9,424					X
		Oliver Creek	03350	9,289	X	X	X	X	
		Buffalo Pass	03352	35,178					X
		Hahns Pk-Bears Ears RD	45	344,521	19	16	24	25	20
Parks	Leased	Beaver Creek	04402	0					X
		Sawmill	04416	0					X
		Parks RD Subtotal	2	0	0	0	0	0	2
Routt National Forest Total Allotments			67	448,016	31	24	34	39	28
San Juan National Forest Allotments									
Dolores	Leased	Summit	13217	20,058					X
		Willow Divide	13218	14,037					X
		Coke Oven	13228	16,749					X
		Groundhog	13418	4,496					X
		Horse Creek	13531	8,385					X
		Spring Creek	13551	7,495	X			X	
		Turkey Creek	13556	17,987					X
		Dolores RD Subtotal	7	89,207	1	0	0	1	6
Columbine	Leased	Elkhorn	13105	6,622					X
		Burnt Timber	13108	5,148		X	X	X	
		Canyon Creek	13109	6,328		X	X	X	
		Virginia Gulch	13112	14,375		X	X	X	
		East Silver Mesa	13113	9,718		X	X	X	
		Tank Creek	13114	10,954	X	X	X	X	
		Engine Creek	13312	7,404					X
		Deer Creek	13313	9,531					X
		Little Molas/West Needles	13315	20,547	X			X	

		West Lime	13317	21,075					X
		Deer Park	13324	7,314					X
		Elk Creek	13325	5,041					X
		Columbine RD Subtotal	12	124,057	2	5	5	6	6
	Vacant	Flume	13311	11,856	X				X
		Columbine RD Subtotal	1	11,856	1	0	0	0	1
Ranger District Total			13	135,913	3	5	5	6	7
San Juan National Forest Total Allotments			20	225,120	4	5	5	7	13
White River National Forest Allotments									
Blanco	Leased	Cattle Creek	00201	3,270					X
		East Miller	00203	10,816					X
		Lost Park/Moeller	00205	8,006	X		X	X	
		Lower Fawn	00206	3,498					X
		Ripple Creek	00211	21,335					X
		Aldrich Lakes S&G	00214	3,084	X	X	X	X	
		Clear Creek	00215	2,226	X	X	X	X	
		Burro Mtn	00216	5,915					X
		Chinese Wall	00217	4,315					X
		Three Points	00218	2,146	X	X	X	X	
		Coal Creek	00219	8,096	X	X	X	X	
		Deer Cr	00220	3,794			X	X	
		Derby Peaks	00221	6,569					X
		Ellison Mtn/Upper Fawn	00222	6,120					X
		Flag Creek/Big Mtn	00223	7,407	X	X	X	X	
		Long Park	00225	4,975					X
		Sleepy Cat/Corral Creek	00226	8,361	X	X	X	X	
		Milk Creek	00229	7,317	X	X	X	X	
		Missouri Cr	00230	5,295					X
		Morapos Cr	00232	4,262	X			X	
		Wilson Mesa	00233	4,129			X	X	
		Sawmill Mtn	00234	4,664	X	X	X	X	
		Shingle Peak	00235	7,914					X
		Lantern Ridge (Teepee Basin)	00237	6,383	X	X	X	X	
		Upper Fawn	00241	6,049	X	X	X	X	
		West Miller	00243	5,107					X
		Salt Box	00249	2,880					X
		Blanco RD Subtotal			27	163,933	12	10	13
Holy Cross	Leased	Red and White Mtn	00712	38,243					X
		Slate Mtn	00714	47,846					X
		Turkey Creek	00720	20,617					X
		Holy Cross RD Subtotal	3	106,706	0	0	0	0	3
Rifle	Leased	Blair Mtn/Triangle Park	00817	16,615					X
		Corral Point	00820	7,696					X
		Patterson Creek	00827	9,919					X
		Rifle RD Subtotal	3	34,230	0	0	0	0	3
White River National Forest Total Allotments			33	304,869	12	10	13	14	19
All Colorado USFS Allotments			189	1,472,794	55	43	59	73	116

APPENDIX C

Calculation of cumulative known coyote take by county in Colorado. "Pre-whelping" (i.e., just prior to period of coyote births in the Spring) population density and reproductive parameters based on Andelt (1996). "Other" coyote take from Colorado Division of Wildlife Furbearer Harvest Survey reports (CDDW 2005), plus private aerial hunting take data estimated from aerial hunting reports obtained from the Colorado Department of Agriculture (see Table 13 in the Final EA). Other assumptions include:

- Average annual "other" coyote take was calculated by eliminating the highest and lowest annual reported take numbers - see discussion under "Issue 3" in Decision document for explanation.
- Most "other" coyote take and WS's take occurs in fall/winter through whelping period in the spring.
- By fall, about 88% of the post-whelping coyote population is remaining (based on Knowlton 1972); hunter harvest and WS take are then assumed to be removed from the fall population, rather than the post-whelping population

Coyote take information

Calculation of population impacts by county																																		
COUNTY	WS COYOTE TAKE				Ave. of WS's take	OTHER COYOTE TAKE	Ave. of OTHER coyote take	AREA (sq. mi.)	Estim. Pre-whelp. Popn. (N=10,000)	% females in popn.	% females in breeding	Ave. size	Popn immediately post-whelping (N=20,000)	Popn based on post-whelping annual cycle	No. of coyotes that could still be taken from other causes	Conclusions																		
	FY02	FY03	FY04	FY05													FY01	FY02	FY03	FY04	FY05	a	b	c	d	e	f	g	h	i	j	k	l	m
Adams	28	34	40	46	16	65	1100	118	87	201	1,852	55%	50%	6	2,128	1,872	1,721	870	10.8%	Popn. not overexploited														
Alamosa	18	14	14	14	21	0	403	39	72	110	723	52%	50%	6	1,317	1,146	1,051	530	21.9%	Popn. not overexploited														
Archuleta	9	23	23	23	22	49	477	768	939	969	735	50%	50%	6	1,307	1,274	514	(65)	3.2%	Suggests possible "overexploitation", but immigration will offset														
Aspen	19	14	41	25	49	477	768	939	969	969	735	50%	50%	6	1,307	1,274	514	(65)	3.2%	Suggests possible "overexploitation", but immigration will offset														
Baca	138	62	112	112	13	184	275	867	390	805	1,355	50%	50%	6	2,409	2,409	1,840	688	2.6%	Popn. not overexploited														
Baker	1	1	1	1	4	738	972	20	173	484	2,558	50%	50%	6	4,604	4,604	2,300	1,736	0.6%	Popn. not overexploited														
Bent	1	1	1	1	16	16	16	0	853	35	1,110	50%	50%	6	2,774	2,461	2,300	1,191	78.9%	Popn. not overexploited														
Boulder	1	1	1	1	61	82	59	146	358	106	740	50%	50%	6	1,332	1,172	1,066	54	0.0%	Popn. not overexploited														
Broomfield	14	7	7	7	7	146	37	0	87	402	34	50%	50%	6	61	54	54	28	0.0%	Popn. not overexploited														
Chaffee	3	3	3	3	7	146	37	0	87	402	34	50%	50%	6	61	54	54	28	0.0%	Popn. not overexploited														
Clear Creek	1	1	1	1	65	73	98	29	135	141	730	50%	50%	6	1,825	1,608	1,509	779	7.2%	Popn. not overexploited														
Comanche	43	12	2	2	3	0	1,705	59	130	618	1,307	50%	50%	6	715	620	629	343	0.0%	Popn. not overexploited														
Cottonwood	225	111	33	123	19	0	0	79	0	73	1,220	50%	50%	6	2,332	2,043	1,779	851	1.0%	Popn. not overexploited														
Crow	41	52	54	48	130	0	55	0	43	0	800	50%	50%	6	1,440	1,267	1,903	1,019	43.8%	Popn. not overexploited														
Custer	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	88.6%	Popn. not overexploited														
Delta	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Dolores	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Douglas	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Elbert	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
El Paso	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Fremont	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Garfield	23	25	5	5	2	468	403	256	478	808	1,146	50%	50%	6	1,330	1,200	1,170	346	7.6%	Popn. not overexploited														
Gunnison	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Huerfano	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Jackson	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Jefferson	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Kiowa	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
La Plata	0	0	0	0	0	0	0	0	0	0	1,171	50%	50%	6	1,171	1,090	1,090	558	0.0%	Popn. not overexploited														
Larimer	35	18	20	24	259	1,550	512	723	766	668	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Las Animas	305	165	66	132	470	917	729	766	530	675	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Lincoln	244	178	12	145	507	928	788	824	467	840	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Magnolia	5	10	15	10	2786	4,583	3,865	2,804	605	2,185	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Mesa	744	688	784	738	910	147	1,445	462	1,557	886	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Montezuma	18	2	20	18	32	537	611	347	625	487	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Montrose	135	113	81	111	1,021	1,021	1,021	1,021	1,021	1,021	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Morgan	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Otero	211	166	76	152	646	367	371	363	371	363	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Ouray	10	5	2	6	32	18	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Park	55	0	0	18	194	1,045	433	405	512	484	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Phillips	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Pitkin	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Prowers	171	109	133	138	1,005	1,100	1,024	1,084	1,084	1,084	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
San Juan	285	218	328	277	178	147	559	433	1,054	385	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
San Miguel	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Saguache	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
San Juan	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
San Miguel	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Sedgewick	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Summit	11	11	0	0	81	73	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Teller	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Washington	15	87	0	0	81	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Weld	2	29	0	0	34	340	1,027	1,171	621	2,049	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Windsor	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
Yuma	0	0	0	0	0	0	0	0	0	0	1,346	50%	50%	6	3,062	2,684	2,352	1,041	0.4%	Popn. not overexploited														
STATE	3,308	2,466	2,104	2,887	21,075	31,428	39,654	46,925	35,352	37,458	164,053	50%	50%	6	107,261	104,683	124,817	49,670	7.0%	Popn. not overexploited														